Installation for MCC1 (Multicarrier Cabinets) Made Easy

Release 1.3
May 2003

Copyright 2003, Avaya Inc.
All Rights Reserved

Notice

Every effort was made to ensure that the information in this document was complete and accurate at the time of printing. However, information is subject to change.

Warranty

Avaya Inc. provides a limited warranty on this product. Refer to your sales agreement to establish the terms of the limited warranty. In addition, Avaya's standard warranty language as well as information regarding support for this product, while under warranty, is available through the following website:

http://www.avaya.com/support

Preventing Toll Fraud

"Toll fraud" is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf). Be aware that there may be a risk of toll fraud associated with your system and that, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

Avaya Fraud Intervention

If you suspect that you are being victimized by toll fraud and you need technical assistance or support, in the United States and Canada, call the Technical Service Center's Toll Fraud Intervention Hotline at 1-800-643-2353.

How to Get Help

For additional support telephone numbers, go to the Avaya Web site:

http:/www.avaya.com/support/

If you are:

- Within the United States, click *Escalation Lists*, which includes escalation phone numbers within the USA.
- Outside the United States, click *Escalation Lists* then click *Global Escalation List*, which includes phone numbers for the regional Centers of Excellence.

Providing Telecommunications Security

Telecommunications security (of voice, data, and/or video communications) is the prevention of any type of intrusion to (that is, either unauthorized or malicious access to or use of) your company's telecommunications equipment by some party.

Your company's "telecommunications equipment" includes both this Avaya product and any other voice/data/video equipment that could be accessed via this Avaya product (that is, "networked equipment").

An "outside party" is anyone who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf. Whereas, a "malicious party" is anyone (including someone who may be otherwise authorized) who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either to/through synchronous (time-multiplexed and/or circuit-based) or asynchronous (character-, message-, or packet-based) equipment or interfaces for reasons of:

- Utilization (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll-facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there may be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company (including but not limited to, human/data privacy, intellectual property, material assets, financial resources, labor costs, and/or legal costs).

Responsibility for Your Company's Telecommunications Security

The final responsibility for securing both this system and its networked equipment rests with you - Avaya's customer system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources including but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure:

- Your Avaya-provided telecommunications systems and their interfaces
- Your Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products.

TCP/IP Facilities

Customers may experience differences in product performance, reliability and security depending upon network configurations/design and topologies, even when the product performs as warranted.

Standards Compliance

Avaya Inc. is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Avaya Inc. The correction of interference caused by such unauthorized modifications, substitution or attachment will be the responsibility of the user. Pursuant to Part 15 of the Federal Communications Commission (FCC) Rules, the user is cautioned that changes or modifications not expressly approved by Avaya Inc. could void the user's authority to operate this equipment.

Product Safety Standards

This product complies with and conforms to the following international Product Safety standards as applicable:

Safety of Information Technology Equipment, IEC 60950, 3rd Edition including all relevant national deviations as listed in Compliance with IEC for Electrical Equipment (IECEE) CB-96A.

Safety of Information Technology Equipment, CAN/CSA-C22.2 No. 60950-00 / UL 60950, 3rd Edition

Safety Requirements for Customer Equipment, ACA Technical Standard (TS) 001 - 1997

One or more of the following Mexican national standards, as applicable: NOM 001 SCFI 1993, NOM SCFI 016 1993, NOM 019 SCFI 1998

The equipment described in this document may contain Class 1 LASER Device(s). These devices comply with the following standards:

- EN 60825-1, Edition 1.1, 1998-01
- 21 CFR 1040.10 and CFR 1040.11.

The LASER devices operate within the following parameters:

- Maximum power output: -5 dBm to -8 dBm
- Center Wavelength: 1310 nm to 1360 nm

Luokan 1 Laserlaite
Klass 1 Laser Apparat

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposures. Contact your Avaya representative for more laser product information.

Electromagnetic Compatibility (EMC) Standards

This product complies with and conforms to the following international EMC standards and all relevant national deviations:

Limits and Methods of Measurement of Radio Interference of Information Technology Equipment, CISPR 22:1997 and EN55022:1998.

Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement, CISPR 24:1997 and EN55024:1998, including:

- Electrostatic Discharge (ESD) IEC 61000-4-2
- Radiated Immunity IEC 61000-4-3
- Electrical Fast Transient IEC 61000-4-4
- Lightning Effects IEC 61000-4-5
- Conducted Immunity IEC 61000-4-6
- Mains Frequency Magnetic Field IEC 61000-4-8
- Voltage Dips and Variations IEC 61000-4-11
- Powerline Harmonics IEC 61000-3-2
- Voltage Fluctuations and Flicker IEC 61000-3-3

Federal Communications Commission Statement

Part 15:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Part 68: Answer-Supervision Signaling. Allowing this equipment to be operated in a manner that does not provide proper answer-supervision signaling is in violation of Part 68 rules. This equipment returns answer-supervision signals to the public switched network when:

- answered by the called station,
- answered by the attendant, or
- routed to a recorded announcement that can be administered by the customer premises equipment (CPE) user.

This equipment returns answer-supervision signals on all direct inward dialed (DID) calls forwarded back to the public switched telephone network. Permissible exceptions are:

- A call is unanswered.
- A busy tone is received.
- A reorder tone is received.

Avaya attests that this registered equipment is capable of providing users access to interstate providers of operator services through the use of access codes. Modification of this equipment by call aggregators to block access dialing codes is a violation of the Telephone Operator Consumers Act of 1990.

This equipment complies with Part 68 of the FCC Rules. On the rear of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed 5.0. To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. REN is not required for some types of analog or digital facilities.

Means of Connection

Connection of this equipment to the telephone network is shown in the following table.

Manufacturer's Port Identifier	FIC Code	SOC/REN/ A.S. Code	Network Jacks
Off/On premises station	OL13C	9.0F	RJ2GX, RJ21X, RJ11C
DID trunk	02RV2-T	0.0B	RJ2GX, RJ21X
CO trunk	02GS2	0.3A	RJ21X
CO trunk	02LS2	0.3A	RJ21X
Tie trunk	TL31M	9.0F	RJ2GX
Basic Rate Interface	02IS5	6.0F, 6.0Y	RJ49C
1.544 digital interface	04DU9-BN, 1KN, 1SN	6.0F	RJ48C, RJ48M
120A2 channel service unit	04DU9-DN	6.0Y	RJ48C

If the terminal equipment (for example, the media server or media gateway) causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, please contact the Technical Service Center at 1-800-242-2121 or contact your local Avaya representative. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant.

It is recommended that repairs be performed by Avaya certified technicians.

The equipment cannot be used on public coin phone service provided by the telephone company. Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

This equipment, if it uses a telephone receiver, is hearing aid compatible.

Canadian Department of Communications (DOC) Interference Information

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

DECLARATIONS OF CONFORMITY

United States FCC Part 68 Supplier's Declaration of Conformity (SDoC)

Avaya Inc. in the United States of America hereby certifies that the equipment described in this document and bearing a TIA TSB-168 label identification number complies with the FCC's Rules and Regulations 47 CFR Part 68, and the Administrative Council on Terminal Attachments (ACTA) adopted technical criteria.

Avaya further asserts that Avaya handset-equipped terminal equipment described in this document complies with Paragraph 68.316 of the FCC Rules and Regulations defining Hearing Aid Compatibility and is deemed compatible with hearing aids.

Copies of SDoCs signed by the Responsible Party in the U. S. can be obtained by contacting your local sales representative and are available on the following Web site:

http://www.avaya.com/support

All Avaya media servers and media gateways are compliant with FCC Part 68, but many have been registered with the FCC before the SDoC process was available. A list of all Avaya registered products may be found at:

http://www.part68.org/

by conducting a search using "Avaya" as manufacturer.

European Union Declarations of Conformity

CE

Avaya Inc. declares that the equipment specified in this document bearing the "CE" (*Conformité Europeénne*) mark conforms to the European Union Radio and Telecommunications Terminal Equipment Directive (1999/5/EC), including the Electromagnetic Compatibility Directive (89/336/EEC) and Low Voltage Directive (73/23/EEC). This equipment has been certified to meet CTR3 Basic Rate Interface (BRI) and CTR4 Primary Rate Interface (PRI) and subsets thereof in CTR12 and CTR13, as applicable.

Copies of these Declarations of Conformity (DoCs) can be obtained by contacting your local sales representative and are available on the following Web site:

http://www.avaya.com/support

Japan

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

To order copies of this and other documents:

Call: Avaya Publications Center
Voice 1.800.457.1235 or 1.207.866.6701
FAX 1.800.457.1764 or 1.207.626.7269

Write: Globalware Solutions
200 Ward Hill Avenue
Haverhill, MA 01835 USA
Attention: Avaya Account Management

E-mail: totalware@gwsmail.com

For the most current versions of documentation, go to the Avaya Web site:

http://www.avaya.com/support/

Installation for MCC1 (Multicarrier Cabinets) Made Easy 15

Install and Connect MCC1 (Multicarrier) Cabinet 17

Check Customer's Order 18
Unpack and Inspect Cabinets 18
Unpack and Inspect Auxiliary Cabinet 18
Check Circuit Packs 19
Correct Shipping Errors 19
Position the PPN Cabinet 19
Position the EPN Cabinets 19
Position the Auxiliary Cabinet (Optional) 20
Install Auxiliary Cabinet Equipment 20
Install Earthquake Protection for MCC1 21
Install Concrete Floor Mounting 21
Install Raised Computer Floor Mounting 22
Connect AC Power and Ground 23
Power Requirements 24
Power Supply Sources (J58890CE-1, J58890CE-2, and J58890CH-1) 24
Grounding an AC-Powered System (J58890CE) 25
Ground AC Load Center 50 ft (15.2 m) or Less from Cabinet 25
Ground AC Load Center More Than 50 ft (15.2 m) from Cabinet 26
Connect Battery Leads (J58890CH-1) 28
Connect Small Battery Holdover 29
Connect Large Battery Holdover 29
Connect Shorting Cable to J58890CE-2 31
Connect AC Power 31
Connect DC Power and Ground 32
Install Rectifier Modules and Battery Interface Unit 33
Connect Power and Ground(s) 34
Install Coupled Bonding Conductor Wires 36
Connect DC Battery and Power Cabinet Grounds 37
Connect DC Power Cabinet Approved Ground 37
Connect AC Power to DC Power Cabinet 37
Connect Ground Wires for DC-Powered Systems 38
Turn Circuit Breakers Off 38
Connect DC Power to PPN and EPN Cabinets 39
Connect DC Battery Cabinet to DC Power Cabinet 40
Connect Mixed AC/DC Power and Ground 40
Connect Remote Power Off Cable 41
Connect External Alarm Cable 42
Check Commercial Power and Connect AC Power 43
Verify Fiber Optic Duplication Interface Cabling (TN792 port networks) . . . 43
Connect Fiber Optic Interconnect Cabling 44
Connect Fiber Optic Cables 45
Connect Standard-Reliability CSS-Connected System with 1 Switch Node 45
Connect High-Reliability CSS-Connected System with 1 Switch Node . . . 46
Connect Critical Reliability CSS-Connected System with 1 Switch Node . . 47

Install Telecommunications Cabling 49

Information about Installing the Cabling 49
Provisioning Plan 49
Main Distribution Frame (MDF) Hardware 50
MDF Cross-Connect Fields 52

Main Distribution Frame . . . 53
Main Distribution Frame Labels . . . 54
Off-Premises Circuit Protection . . . 55
Sneak Fuse Panels . . . 56
Cable Installation . . . 56
Equipment Room Cabling Labels . . . 57
Cable Routing Guidelines . . . 57
Control Carrier Outputs Cable Installation . . . 57
Trunk Cables Among Network Interface, Sneak Fuse Panel, and Cabinet . . . 58
Coupled Bonding Conductor . . . 60
Installation Space Requirements . . . 60
Sneak Fuse Panels and Emergency Transfer Units . . . 61
110-Type Hardware . . . 61
Cable Slack Manager . . . 61
Station Wiring Design . . . 61
Information Outlets . . . 61
Station Cables . . . 62
Closets . . . 63
Station Circuit Distribution from Equipment Room . . . 65
4-Pair Station Circuits . . . 65
3-Pair to 4-Pair Station Circuit Distribution . . . 66
Voice and Data Terminals . . . 69
Connectable Administration Terminals . . . 70
Layout . . . 71
Information Outlet Locations . . . 71
Site, Satellite, and Adapter Locations . . . 71
Sizing 4-Pair Station Cables . . . 71
Sizing 25-Pair and Multiple 25-Pair Station Cables . . . 72
3-Pair Station Cable Circuits . . . 72
4-Pair Station Cable Circuits . . . 72
Patch Cord/Jumper Installation and Administration . . . 72
Label Control Carrier Cable . . . 75
Connect Control Carrier Outputs Cable . . . 75
Connect Trunk Pairs Using Concentrator Cables . . . 75
Connect Trunk Pairs to Cabinet Using Jumper Wires To Establish 3-Pair Modularity . . . 76
Install Cables Between Cabinet and MDF . . . 78
Install Connector Cables Between Auxiliary Cabinet and MDF . . . 79
Mount 110A- or 110P-type terminal blocks on the wall . . . 79
Mount 110P-type terminal blocks on a frame . . . 82
Install Cable Slack Managers . . . 84
Install Sneak Fuse Panels . . . 85
Install Coupled Bonding Conductor . . . 87

Bring the System Online 91

About Accessing the System . . . 91
Administration Screens and Commands . . . 92
Administering the Circuit Packs . . . 92
Administration Commands . . . 93
Change Circuit Packs Form . . . 93
Change Circuit Pack Form Implementation Notes . . . 94
DEFINITY AUDIX System Power Procedures . . . 95
Manually Power Down AUDIX System . . . 95
Manually Power Up AUDIX System . . . 95

Access the System 95
Install and Use Avaya Site Administration 96
Connect Directly to the Avaya Media Gateway 97
Connect Remotely to the Avaya Media Gateway Through a Data Module . 98
Connect Remotely to the Avaya Media Gateway Through a Modem 99
Set the Data Module to DCE Mode 101
Add a Data Module to the Switch 101
Test Data Module Hardware Connections 101
. . . . . Set the Data Module Operating Mode 102
Set the 7400B+ Data Module Options 102
Activate the System 103
Install Translation Flash Memory Card (Avaya DEFINITY Server si) 103
Install Removable Media (MCC1 only) 104
Power Up AC-Powered System 105
Power Up DC-Powered System 105
Verify Messages on Terminal 105
Administer the System 106
Log in to the System 107
Deliver or install the License File 107
Administer no-license/emergency numbers 109
Change Site Data (MCC1 only) 110
Change Cabinet 1 (MCC1 only) 110
Add Cabinet 2 through N (AvayaDEFINITY Server r) 112
Set Country Options 113
Change the Password 114
Set Daylight Savings Rules 115
Set Date and Time 116
Reboot High Reliability System (MCC1 only) 118
Enable Duplication and Boot Critical Reliability System (Avaya DEFINITY Server r) 119
Administer Attendant Console 119
Save Translations (Avaya DEFINITY Server si) 119
Save Translations (Avaya DEFINITY Server r) 120
Add Translations (Avaya DEFINITY Server si) 120
Add Translations (Avaya DEFINITY Server r) 120
Resolve Alarms 121
Register the Switch for Maintenance 121
Log off the System 123

Test the System 125

LED Indicators 125
Attendant Console LEDs 126
Terminal Alarm Notification 126
Circuit Pack LEDs 126
DS1 Converter Circuit Pack LEDs 126
SPAN LEDs 127
LEDS on Standby Components 127
Check System Status for Each Cabinet 129
Check Circuit Pack Configuration 131
Test Time Division Multiplexing Bus in Processor Port Network 131
Test Tone-Clock Boards 132
Test SPE Duplication Memory Shadowing Link (if duplicated) 133
Test Duplicated Switch Processing Element Interchange (if duplicated) . 133
Test Expansion Interface Circuit Packs 134
Test Time Division Multiplexing Bus for Each Expansion Port Network . . 135
Test Tone-Clock for Each Expansion Port Network 135
Test Tone-Clock Interchange for Each Expansion Port Network 135

Test Expansion Interface Exchange for Each Expansion Port Network . . 136
Check Circuit Pack Configuration 137
Save Translations, if Required 137

Install and Wire Telephones 139

Voice and Data Terminals 139
Connectable Voice and Data Terminals 140
Connectable Administration Terminals 141
Connect a Typical Telephone 142
Connect Adjunct Power 143
Connect an Analog Station or 2-Wire Digital Station 143
Analog Tie Trunk Example 145
Digital Tie Trunk Example 146
DS1 Tie Trunk Example 146
Collocated DS1 Tie Trunks 147
DS1 Tie Trunks Using T1 Channel Service Unit 147
Auxiliary Connector Outputs 148
Three-Pair and Four-Pair Modularity 151
Adjunct Power Connection Locations 152
Attendant Console Example 153
Attendant Console Cabling Distances, Local and Phantom Power 154
Auxiliary Power 154
Hard-Wire Bridging 155
Dual Wiring of Two-Wire and Four-Wire Endpoints 155
Install the Attendant Console 155
Install the 26B1 Selector Console 156
Connect External Alarm Indicators and Auxiliary Power 156
Connect Power Distribution Unit External Alarm Wires 157
Remote Network Interface 159
Install the Remote Network Interface 160
Install Off-Premises Station Wiring 161
Off-Premises or Out-of-Building Stations 162
Off-Premises Connections 162
Off-Premises Protection Requirements 164
Voice Terminal Restrictions for Exposed Environments 165
Digital Out-of-Building Voice Terminal Protection 165
Installing the ITW Linx Enhanced Protector 166
Installing the 4C3S-75 Enhanced Protector 166
Installing the Data Link Protector 166
Emergency Transfer Units and Associated Telephones 168
808A Emergency Transfer Panel and Telephone Installation Examples 169
Install the 808A Emergency Transfer panel 170
Install Telephones Used Only for Emergency Transfer (Trunk/Auxiliary Field) 175
Install Telephones Used for Emergency Transfer and as Normal Extension (Trunk/Auxiliary Field) 176
Install External Ringing 177
Install the Queue Warning Indicator 179

Install and Wire Telephone Power Supply 183

1145B Power Supply 183
Important Warning for 1145B Power Supply 186
Install the Wall-Mounting Plates 188
Mount the 1146B Power Distribution Unit 189

Install the Battery Mounting/Wiring 191
Install the Expanded Power Distribution Unit 191
Power Up and Test the Power Supply 193
Wire the 1146B Power Distribution Unit 193
Reset LEDs on Power Distribution Unit 194
1152A1 Mid-Span Power Distribution Unit 195
1151A1 and 1151A2 Power Supplies 195
Using 1151A1 and 1151A2 Power Supplies 195
Important Safety Instructions for 1151A1 and 1151A2 Power Supplies 196
Connect the 1151A1 or 1151A2 Power Supplies 197

Install Additional Hardware 199

DEFINITY Wireless Business System 200
Cellular Business System 200
Forum PCM 200
Add Port Circuit Packs 200
Circuit Pack and Auxiliary Equipment Classifications 200
Installing Circuit Packs 202
Install and Administer ISDN - BRI 203
BRI Terminating Resistor Installation 203
Important Warning for Telephone Wiring 204
Terminating Resistor Adapter and Block 204
Installing Multipoint Adapters 206
BR851-B Adapter (T-Adapter) 207
367A Adapter 207
Basic Multipoint Installation Distances 208
Add Circuit Packs (ISDN BRI) 209
Install Cables (ISDN BRI) 209
Enter Added Translations (ISDN BRI) 209
Resolve Alarms 209
Save Translations (ISDN BRI) 210
Add a TN2501AP Announcement Circuit Pack 210
Verifying the required hardware 210
Installing the TN2501AP circuit pack 210
Configuring the system for the TN2501AP 211
Add Multiple Announcement 212
TN750C Announcement Circuit Pack 212
TN2501AP Announcement Circuit Pack 213
Save and Restore Recorded Announcements 213
TN750 and TN750B Announcement Circuit Packs 214
Replace a TN750 or TN750B with a TN750C or Move all Announcements from a TN750B to a TN750C 214
Add additional TN750C Circuit Packs 215
Move a Single Announcement from one Announcement Circuit Pack to another 215
Add Speech Synthesis 216
Add Code Calling Access 216
Add CallVisor ASAI 216
Deliver License File (CallVisor ASAI) 217
Save Translations (CallVisor ASAI) 218
Add Circuit Packs (CallVisor ASAI) 219
Install Cables (CallVisor ASAI) 219
Enter Added Translations (CallVisor ASAI) 219
Resolve Alarms (CallVisor ASAI) 219
Save Translations (CallVisor ASAI) 219

Add Packet Bus Support 219
Disable Alarm Origination (Packet Bus Support) 220
Save Translations (Packet Bus Support) 220
Power Down Cabinet (Packet Bus Support) 221
Install Circuit Packs (Packet Bus Support) 221
Power Up System (Packet Bus Support) 221
Deliver or install the License File (Packet Bus Support) 222
Test the Packet Bus and C-LAN Circuit Pack (Packet Bus Support) 224
Resolve Alarms (Packet Bus Support) 224
Enable Scheduled Maintenance and Alarm Notification (Packet Bus Support) 224
Save Translations (Packet Bus Support) 224
Add DCS Interface 224
Install Cables (Add DCS) 225
Add Circuit Packs (Add DCS) 226
Test the External Connection to the LAN (Add DCS) 227
Deliver License File (Add DCS) 227
Administer DCS (Add DCS) 229
Save Translations (Add DCS) 229
Administer TN464GP/TN2464BP with Echo Cancellation 230
Administer TN464GP/TN2464BP 230

Add IP Solutions 233

TN802B IP Interface Assembly 233
TN2302AP Media Processor 233
Installing a TN2302AP IP Media Processor 233
Preparing for Installation and Upgrade 234
Check your onsite equipment 234
Check your shipment 235
Installing the TN2302AP IP Media Processor 236
Connect the cables for TN799x 236
Connect the cables for TN2302AP 237
Connect the Ethernet 237
Install the Circuit Packs 237
Perform Initial Administration Steps for C-LAN and IP Media Processor . 238
Test the External Connection to the LAN 240
Upgrading TN802 IP Trunking to TN2302AP IP Media Processor 241
Perform Pre-upgrade Administration 241
Remove the Circuit Packs 241
Replace the Cables 242
Install the Circuit Packs 242
Administer and Test 243
Upgrading a TN802B IP Interface Assembly to TN2302AP IP Media Processor 243
Perform Pre-upgrade Administration 243
Remove the Circuit Packs 244
Replace the Cables 245
Install the Circuit Packs 245
Perform Additional Administration Steps 245
Installing a TN802B in Media Processor Mode 246
Prepare for Installation 246
Check your shipment 247
Connect the Cables for TN799x 248
Connect the Cables for TN802B 249
Connect the Modem 249
Connect the Ethernet 250

Install the Circuit Packs . . . 250
Administer the TN799x C-LAN . . . 253
Administer the IP Interface . . . 253
Test the External Connection to the LAN . . . 255
Installing a TN802B in IP Trunk Mode . . . 256
Prepare for Installation . . . 256
Check your Shipment . . . 257
Connect the Cables for TN802B . . . 258
Connect the Modem . . . 259
Connect the Monitor, Keyboard, and Mouse . . . 260
Connect the Ethernet . . . 260
Install the Circuit Pack . . . 261
Test the Modem . . . 262
Administer the IP Interface . . . 262
Log onto the TN802B Interface Server . . . 263
Change Mu-Law to A-Law (for systems using A-Law companding only) . . . 264
Assign Server and Domain Names . . . 264
Assign an IP Address . . . 265
Assign Default Gateway . . . 267
Check Network Services . . . 270
Test the External Connection to the LAN . . . 271
Test the IP Interface Onboard LAN Connections . . . 271
Upgrading a TN802 V3 (or later) to a TN802B (MedPro Mode) . . . 272
Connect the Monitor, Keyboard, and Mouse . . . 273
Upgrade IP trunks (R7) to H.323 trunks . . . 274
Upgrade to TN802B (R10) . . . 275
Verify Circuit Packs . . . 277

Add Channel Service Units 279

About Installing an ICSU Module . . . 279
Check for required components . . . 279
H700-383-Equivalent Cable Guidelines . . . 279
Installing the 120A3A CSU . . . 280
Installing a 3150/3170 Channel Service Unit . . . 282

Install and Administer Trunks 285

Install CAMA/E911 Trunk . . . 285
Installing the Circuit Pack . . . 287
Adding the Trunks . . . 288
Changing the Feature Access Code . . . 289
Changing the ARS Digit Analysis . . . 290
Changing the Route Patterns . . . 291
Changing the CAMA Numbering and Class of Restriction . . . 292
Install ISDN—PRI Trunks . . . 294
Installing ISDN - PRI in North American . . . 294
Installing ISDN - PRI Internationally . . . 295
Add Packet Bus Support (ISDN PRI) . . . 295
Add Circuit Packs (ISDN PRI) . . . 295
Install Cables (ISDN PRI) . . . 295
Enter Added Translations (ISDN PRI) . . . 296
Resolve Alarms (ISDN PRI) . . . 296
Save Translations (ISDN PRI) . . . 296
Adding CO, FX, WATS, and PCOL Trunks . . . 296
Adding DID Trunks . . . 296
Adding Tie Trunks . . . 297
Add DS1 Tie and OPS Trunks . . . 298

Upgrading from a TN722 to a TN767C 299
Disable Scheduled Maintenance and Alarm Origination to INADS (DS1 Tie and OPS Trunks) 299
Save Translations (DS1 Tie and OPS Trunks) 299
Shut Down DEFINITY LAN Gateway System (DS1 Tie and OPS Trunks) 300
Shut Down DEFINITY AUDIX System (DS1 Tie and OPS Trunks) 300
Power Down System (DS1 Tie and OPS Trunks) 301
Add Circuit Packs (DS1 Tie and OPS Trunks) 301
Install Cables (DS1 Tie and OPS Trunks) 301
Power Up System (DS1 Tie and OPS Trunks) 301
Enter Added Translations (DS1 Tie and OPS Trunks) 302
Save Translations (DS1 Tie and OPS Trunks) 302
Resolve Alarms (DS1 Tie and OPS Trunks) 302
Deliver or Install License file (DS1 Tie and OPS Trunks) 302
Adding TTC Japanese 2-Mbit Trunks 304
Add TN1654 DS1 Converter (r only) 305
Circuit Pack Switches 305
Circuit Pack and Cabling (T1 Only) 305
75-ohm E1 Interface Cabling 306
Set Circuit Pack Switches (TN1654 DS1 Converter) 308
Installing TN1654s in a Port Carrier 309
Installing TN1654s in a Switch Node Carrier 310
Connecting a Port Carrier to a Switch Node Carrier (TN1654 DS1 Converter) 311
Connecting Through a Channel Service Unit 311
Mounting the 127A (TN1654 DS1 Converter) 315
Wiring Off-Premises Stations (TN1654 DS1 Converter) 316

Installing the Stratum 3 Clock 317

Unpack and Inspect Stratum 3 Clock Cabinet 317
Install and Position Stratum 3 Clock Cabinet 317
Connect AC Power to Stratum 3 Clock Cabinet 318
Check and Connect Commercial AC Power 318
Connect DC Power and Ground to Stratum 3 Clock Cabinet 318
Connect Clock Cabinet Grounding 318
Connect Stratum 3 Clock DC Power 319
Set the Clock Options 319
Cable the Stratum 3 Clock 320
Install the Stratum 3 Clock Wiring 322

Install and Connect Modems 325

Connect Modem to Telephone Network 325
Set External Modem Options 326
Add U.S. Robotics Model USR 33.6 EXT External Modem to EPN 328
Add U.S. Robotics Model USR 33.6 EXT External Modem to PPN 329
Add External Modem to TN1648B 330
Add Modem Pooling 336
Add Pooled Modem (Paradyne 3800 Series) 337
Set the Modem Connected to Data Module 337
Set the Modem Connected to the Data Terminal Equipment (DTE) 338
Set 7400A and 7400B Options (Modem Pooling) 338

Upgrade Firmware on Programmable Circuit Packs 341

Self and C-LAN-distributed download procedure 342
Troubleshooting firmware downloads 352

Test Telephones and Other Equipment 355

Make Test Calls . . . 355
Test 302C Attendant Console . . . 356
Test Selector Console . . . 356
Test External Ringing . . . 356
Test Queue Warning Indicator . . . 357
Test Integrated Announcement . . . 357
Record Announcement . . . 357
Playback Announcement . . . 357
Delete Announcement . . . 357
Test Music-on-Hold . . . 358
Test Emergency Transfer . . . 358
Test Remote Access Interface . . . 358
Remote Test . . . 358
Local Test . . . 359
Test Basic Rate Interface . . . 359
Test Duplication Option Processing Element Interchange . . . 359
Test Terminating Trunk Transmission . . . 360
Test the C-LAN Connection . . . 360
Test Stratum 3 Clock (if used) . . . 361
Check for Red LEDs . . . 361
Verify Timing to the System . . . 362
Perform Complete System Test . . . 362
Resolve Alarms . . . 362
Activate and Test Alarm Origination Feature . . . 363

Option Switch Settings 365

Data Module Option Switch Settings . . . 365
About DCS Switch Settings . . . 365
About 7400D Data Module Option Settings . . . 366
Set DCS Switches . . . 367
Set 7400D Options . . . 368
Set 7400A and 7400B Options . . . 369
External Modem Option Settings . . . 370
Printer Option Settings . . . 371
Call Detail Recording Option Settings . . . 374
AUDIX Interface Option Settings . . . 377
TN760D Tie Trunk Circuit Pack Option Settings . . . 378
TN464/2464 Option Settings . . . 380

Approved Grounds 383

Approved Floor Grounds . . . 383

Connecting and Handling Fiber Optic Cables 385

LASER Product . . . 385
Detailed Information . . . 385
Optical Cross-Connect Hardware . . . 385
100A Lightguide Interconnect Unit . . . 387
10A Lightguide Connector Panel and Couplings . . . 388
Lightguide Troughs . . . 388
Fiber Interconnection Cable . . . 389
Multimode Fiber Cable . . . 389
Single-mode Fiber Cable . . . 389
Labels for Fiber Optic Cables . . . 390

Cleaning Fiber Optic Cables 390

Install Fiber Optic Cable Pass-Thru Kit for MCC1 (Multicarrier) Cabinets 391

LASER Product 391
Prepare the cabinet 391
Install the Pass-Thru Kit 395
Test the Installation 402
Administering Fiber Optic Cables 403
Fiber Link Administration Form 403
Administration commands 403
PN reliability configurations 404
Administering PNC Duplication 404
Administering Fiber Links 405
Duplicated Fiber Link Administration 405
DS1C Converter Complex Administration for TN574 Circuit Packs 407
Duplicated DS1C Converter Complex Administration for TN574 Circuit Packs . 410
DS1 Converter Complex Administration for T1 TN1654 Circuit Packs 411
Dupicated DS1 Converter Complex Administration for T1 TN1654 Circuit Packs .411
DS1 Converter Complex Administration for E1 TN1654 Circuit Packs 412
Duplicated DS1 Converter Complex Administration for E1 TN1654 Circuit Packs 413

Connector and Cable Diagrams (Pinout Charts) 415

Circuit Pack and Auxiliary Equipment Leads (Pinout Charts) 415
Circuit Pack and Auxiliary Equipment Leads (Pinout Charts) 417
Lead and Color Designations 419
TN2185B ISDN-BRI 4-wire S Interface 421
TN2198 ISDN-BRI 2-wire U Interface 422
TN793B 24-Port Analog Line circuit pack 422
DS1 Interface Cable H600-307 424

Index 425

Installation for MCC1 (Multicarrier Cabinets) Made Easy

Perform these tasks to install multicarrier cabinets:

1. Install and Connect MCC1 (Multicarrier) Cabinet
2. Install Telecommunications Cabling
3. Bring the System Online
4. Test the System
5. Install and Wire Telephones
6. Install and Administer Trunks
7. Install and Wire Telephone Power Supply
8. Install Additional Hardware
9. Add IP Solutions
10. Install and Connect Modems
11. Administer the features, telephones, and other equipment according to customer data found on the provisioning plan. Use the procedures in the *Administrator's Guide for Avaya Communication Manager*.
12. Test Telephones and Other Equipment

Select the activity you are currently performing to see information, task lists, and procedures for that activity.

Note:
It may be more efficient to install each hardware component, administer it, and test it before going on to install another component. As an example, install the attendant console using the procedures in Install and Wire Telephones, administer it using the procedures in the *Administrator's Guide for Avaya Communication Manager*, and test it using the procedures in Test Telephones and Other Equipment.

You can also find information on these topics here:

- Option Switch Settings
- Approved Grounds
- Administering Fiber Optic Cables
- Connector and Cable Diagrams (Pinout Charts)

Install and Connect MCC1 (Multicarrier) Cabinet

This section describes how to install the MCC1 (Multicarrier) cabinet. For information on Single-Carrier Cabinets, go to Install and Connect SCC1 (Single-Carrier Cabinets).

Floor plans and equipment layouts for typical system installations are provided in the *System Description* book.

Note:
Before you begin the cabinet installation, check the location of the AC/DC power receptacles. The receptacles must be on separately fused circuits not controlled by wall switches. They must be located within 10 feet (3 meters) of the cabinet, and outside the Main Distribution Frame (MDF) area.

Task List: Install and Connect MCC1

Perform these tasks before you begin the installation:

1. Check Customer's Order
2. Unpack and Inspect Cabinets
3. Unpack and Inspect Auxiliary Cabinet
4. If you cannot get timing from the service provider, you may need to install a Stratum 3 clock. If this system includes a Stratum 3 clock, go to Installing the Stratum 3 Clock for instructions.
5. Check Circuit Packs
6. Correct Shipping Errors

Perform these tasks to install the cabinets:

7. Position the PPN Cabinet
8. Position the EPN Cabinets
9. Position the Auxiliary Cabinet (Optional) and Install Auxiliary Cabinet Equipment
10. If required, Install Earthquake Protection for MCC1

WARNING:
If the approved ground or approved floor ground can only be accessed inside a dedicated power equipment room, then connections to this ground should be made by a licensed electrician. See Approved Grounds for more information.

11. Connect AC Power and Ground or Connect DC Power and Ground (These tasks have their own task lists.)
12. Connect Remote Power Off Cable
13. Connect External Alarm Cable
14. Check Commercial Power and Connect AC Power
15. Verify Fiber Optic Duplication Interface Cabling (TN792 port networks)
16. Connect Fiber Optic Interconnect Cabling

Check Customer's Order

Begin

Return to Task List

1. Check the customer's order and the shipping packing lists to confirm all equipment is present.
2. Check the system adjuncts for damage and report all damage according to local shipping instructions.
3. If any equipment is missing, report the information to your Avaya representative.
4.

Unpack and Inspect Cabinets

Begin

Return to Task List

CAUTION:
A cabinet may weigh as much as 800 lb (363 kg) and may be top heavy. Use extreme caution.

1. Check the status of the SHOCKWATCH and/or TILTWATCH indicators on the container. If the container has been shaken or tilted beyond specifications, the indicators are red, indicating potential damage. Report any damage according to local shipping instructions.

DANGER:
Take care to avoid injury while cutting and removing the 2 metal bands.

2. Unpack the cabinet and remove all packing material.
3. Move the cabinets into their proper positions.
4. Do not adjust the leveling feet at this time.

Return to Task List

Unpack and Inspect Auxiliary Cabinet

Begin

Return to Task List

The Auxiliary cabinet is normally positioned adjacent to the PPN cabinet or the EPN cabinet, if provided.

1. Check the status of the SHOCKWATCH and/or TILTWATCH indicators on the container. If the container has been shaken or tilted beyond specifications, the indicators are red, indicating potential damage. Report any damage according to local shipping instructions.

DANGER:
Take care to avoid injury while cutting and removing the 2 metal bands.

2. Unpack the cabinet and remove all packing material.
3. Move the cabinet into its proper position.
4. Remove the lower rear panel from the Auxiliary cabinet.

Note:
You reinstall the lower rear panel when the installation is completed.

Return to Task List

Check Circuit Packs

Begin

Return to Task List

1. Ensure all circuit packs are fully inserted into the proper slots according to the Customer Service Document (CSD).

   Report any discrepancies in circuit pack type or quantity to your Avaya representative. For detailed circuit pack descriptions, refer to the *System Description* book.

2. Check the system adjuncts for damage and report all damage according to local shipping instructions.

Correct Shipping Errors

Begin

Return to Task List

1. Red-tag all defective and over-shipped equipment.

   For Streamlined Implementation in the United States, call 1-800-772-5409. For customers outside the United States, contact your order service agent.

2.

Position the PPN Cabinet

Begin

Return to Task List

1. If the system is supplied with cable ductwork, space the cabinets on 32 in. (81.3 cm) centers +-1/8 in. (0.3 cm). They must be level and must be square with respect to each other.
2. If the system is supplied with cable slack managers, place the cabinets far enough from the connection field to lay down the 32 in. (81.3 cm) slack managers and to provide a little extra room for the cables to access the cable slack managers.
3. If earthquake protection is required, Install Earthquake Protection for MCC1.
4. If earthquake protection is not required, level the cabinets and adjust and lock the cabinet stabilizing bolts to keep the cabinet from moving.
5. At the bottom of the cabinet, install hole plugs (provided with cabinet) in the holes previously occupied by the 4 carriage bolts.

Return to Task List

Position the EPN Cabinets

Begin

Return to Task List

Each EPN cabinet is normally positioned adjacent to the PPN cabinet but may be located remotely in a different room or a different building. A configuration can have up to 5 EPNs in a MCC1.

1. The procedure for installing an EPN cabinet is the same as for the PPN cabinet.
2. If earthquake protection is required, Install Earthquake Protection for MCC1.
3. If earthquake protection is not required, level the cabinets and adjust and lock the cabinet stabilizing bolts to keep the cabinets from moving.

Note:
To install a new EPN cabinet to an *existing* system, refer to the *Upgrades and Additions for Avaya DEFINITY® Server R*.

Return to Task List

Position the Auxiliary Cabinet (Optional)

Begin

Return to Task List

1. Position the Auxiliary cabinet next to the PPN cabinet (or EPN cabinet, if installed). The location of equipment inside the Auxiliary cabinet is specified in the Customer Service Document (CSD).
2. If earthquake protection is required, Install Earthquake Protection for MCC1.
3. If earthquake protection is not required, level the cabinets and adjust and lock the cabinet stabilizing bolts to keep the cabinet from moving.

Return to Task List

Install Auxiliary Cabinet Equipment

Begin

Return to Task List

The Auxiliary cabinet allows for carrier, 23-in. (58.4 cm) rack, or panel mounting of hardware. The following equipment is furnished with the cabinet:

- Fuse panel — Distributes -48 VDC power to fused cabinet circuits
- Power receptacle strip — Provides switched and unswitched 120 VAC receptacles
- DC connector block — Required when Auxiliary cabinet is powered by an external DC source
- AC to DC power supply — Converts AC power provided by the AC power strip switched outlet to the required DC voltage

Install equipment inside the cabinet as specified in the CSD. The following optional equipment can be installed:

- Audichron H9040 Wake-Up Announcement System
- 909A/B Universal Coupler
- 7400 Series Data Modules
- Z77A Multiple Data Mounting
- Fan Assembly — Requires 120 volt AC power
- COMSPHERE 3000-series modems
- External Channel Service Unit (CSU) — 1 is required for each T1 carrier link
- PagePac Paging System — 3 models are available. All PagePac models require 120 VAC power.

- Model 15A Announcement System — see the table for a list of equipment.

  The BLD1 circuit pack provides 8 channels with up to 20 seconds of recording time on each channel. The BLD2 circuit pack provides 8 channels with up to 40 seconds of recording time on each channel. Each chassis can be populated with any combination of 2 BLD circuit packs.

  The Model 15A Announcement System is FCC registered and does not require a voice coupler.

Model 15A Announcement Equipment
Description
1 chassis and 1 BLD1 circuit pack
1 BLD1 circuit pack
1 chassis and 1 BLD2 circuit pack
1 BLD2 circuit pack
1 remote record module

Return to Task List

Install Earthquake Protection for MCC1

Begin

Return to Task List

Use the correct procedure for your installation:

Install Concrete Floor Mounting

Install Raised Computer Floor Mounting

Install Concrete Floor Mounting

1. Position the cabinet in the exact position it is to occupy when the installation is complete.
2. Insert a pencil or marker through the holes previously occupied by the carriage bolts (front and rear) in the bottom of the cabinet and mark the floor directly beneath each hole.
3. Roll the cabinet out of the way and drill four 1/2-in. (1.27 cm) diameter holes about 1.5 in. (3.8 cm) deep at the locations marked in Step 2.
4. Insert concrete floor anchors (STARR part number 3425) into the holes.
5. Roll the cabinet back into place and align the cabinet holes over the concrete floor anchors.Adjust the leveling legs until the cabinet is level. See Earthquake Mounting — Raised Computer Floor.

Note:
If the system is supplied with cable ductwork, the cabinets must be level from front to rear and from side to side. They must be square with respect to each other to within ±1/8-in. (0.3 cm).

6. Secure the cabinet to the floor with the 4 supplied 3/8-16 x 4.5-in. (11.4 cm) bolts and four 3/8-in. flat washers.
7. Repeat this procedure for each cabinet to be installed.

Install Raised Computer Floor Mounting

1. Position the cabinet in the exact position it is to occupy when the installation is complete.
2. Insert a pencil or marker through the holes previously occupied by the carriage bolts (front and rear) in the bottom of the cabinets and mark the raised floor panels directly beneath each hole.
3. Roll the cabinet out of the way and drill 4 holes 5/8-in. (1.6 cm) in diameter through the raised floor panels marked in Step 2.

CAUTION:
Take care while drilling the holes through the raised floor that the drill bit does not penetrate any cables below the floor that could cause damage to the cable or injury to the installer.

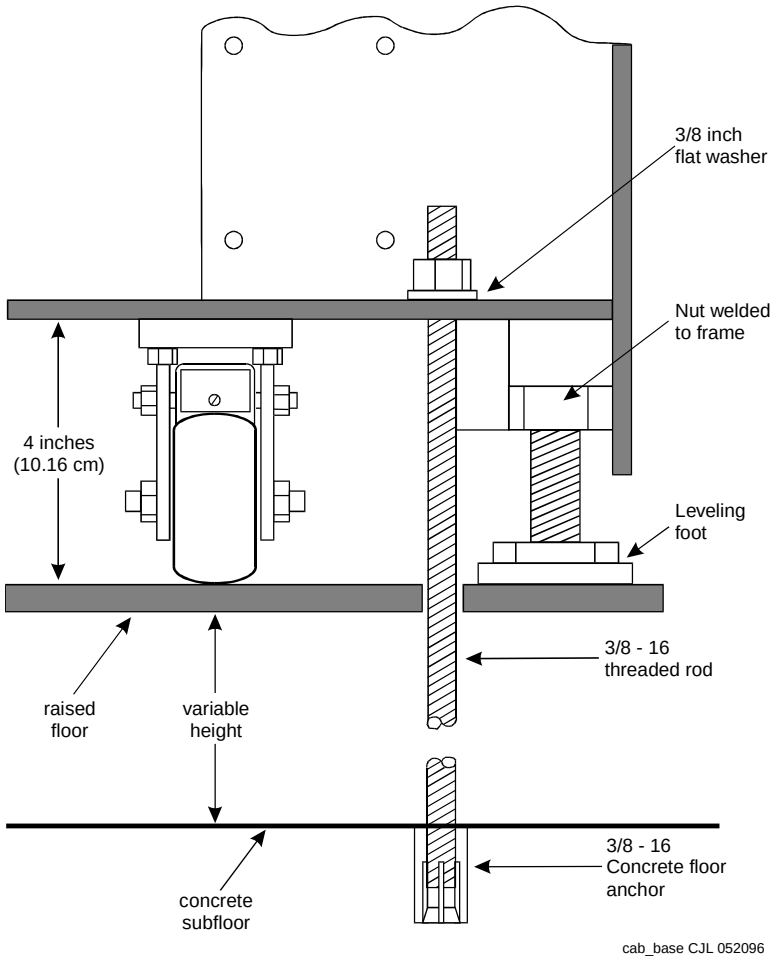
4. Insert a long punch through the holes drilled in Step 3 and mark the concrete floor beneath the raised floor panels.
5. Remove the raised floor panels in which the holes were drilled.
6. Using 1/2-in. (1.3 cm) anchor bits, drill a hole at each of the locations marked in Step 4. Stop drilling when the mark on the side of the bit reaches the floor level.
7. Insert a concrete floor anchor (STARR part number 3425) into the hole until the mark on the bit reaches floor level again. Snap the top of the anchor bit off. Repeat for the remaining holes.
8. A 3/8-16 threaded rod is used to secure the cabinet to each concrete floor anchor. See Earthquake Mounting — Raised Computer Floor.

   Measure the distance from 1 of the anchors to the bottom of the cabinet. Add 1/2-in. (1.3 cm) to this measurement to allow the rod to be threaded into the floor anchor. Add an additional 1/2-in. (1.3 cm) to allow the rod to protrude up through the bottom of the cabinet. For example: if the distance from the floor anchor to the bottom of the cabinet is 10 in. (25 cm), cut the threaded rod 11 in. (27.9 cm) long.
9. When all 4 threaded rods are cut, replace the raised floor panels removed in Step 5.
10. Position the cabinet over the holes and adjust the leveling legs until the cabinet is level.

Note:
If the system is supplied with cable ductwork, the cabinets must be level from front to rear and from side to side. They must be square with respect to each other to within +-1/8-in. (0.3 cm).

11. Insert the threaded rods through the cabinet bottom and thread into the concrete floor anchors.
12. Place a 3/8-in. flat washer onto each rod. Thread a 3/8-16 hex nut onto each rod and tighten securely.
13. Repeat this procedure for each cabinet to be installed (including the Auxiliary Cabinet and the Stratum 3 Clock Cabinet, if required).

Earthquake Mounting — Raised Computer Floor



Return to Task List

Connect AC Power and Ground

Return to Task List

CAUTION:
The equipment room AC power and ground wiring must be performed by a qualified electrician. Refer to the *System Description* for site requirement information.

CAUTION:
The power circuit must be dedicated to the system and must not be shared with other equipment and must not be controlled by a wall switch. The AC receptacle should not be located under the MDF.

CAUTION:
System grounding must comply with the general rules for grounding contained in Article 250 of the National Electrical Code (NEC), National Fire Protection Agency (NFPA) 70, or the applicable electric code in the country containing the equipment. For more information, refer to Approved Grounds.

For information about connecting AC power and ground, see:

- Power Requirements

- Power Supply Sources (J58890CE-1, J58890CE-2, and J58890CH-1)
- Grounding an AC-Powered System (J58890CE)
- Connect Mixed AC/DC Power and Ground

Task List: Connect AC power and ground

Perform these tasks to connect AC power and ground:

1. Ground AC Load Center 50 ft (15.2 m) or Less from Cabinet or Ground AC Load Center More Than 50 ft (15.2 m) from Cabinet
2. Connect Battery Leads (J58890CH-1)
3. Connect Small Battery Holdover or Connect Large Battery Holdover
4. Connect Shorting Cable to J58890CE-2
5. Connect AC Power

Power Requirements

DEFINITY System Power Requirements			
Maximum DEFINITY UL Rating Label Power Capacity			
Vac In	Iac In	Max W In	BTU/Hr
208	24	3245	11071.26
240	21	3276	11177.71
120	40	3120	10645.44

Power Supply Sources (J58890CE-1, J58890CE-2, and J58890CH-1)

The connect AC power and ground procedures apply to the AC-powered PPN and EPN cabinets.

Any of these power sources can supply 60 Hz power to the AC load in Release 5 and later systems:

- Single-phase, 4-wire, 120/240 VAC supplying 240 VAC.This source has 2 hot wires, 1 ground wire, and 1 neutral wire (J58890CE).
- Single-phase, 4-wire, 120/208 VAC supplying 208 VAC. This source has 2 hot wires, 1 ground wire, and 1 neutral wire (J58890CE).
- Single-phase, 3-wire, 208 or 240 VAC. This source has 2 hot wires and 1 ground wire (J58890CH).

Either of these power sources can supply 50 Hz power to the AC load in Release 5 and later systems:

- Non-United States 5-wire, Y, 220/380 VAC. This source has 3 hot wires, 1 neutral wire, and 1 ground wire.
- Non-United States Delta, 4-wire, 220 or 240 VAC. This source has 3 hot wires and 1 ground wire.

AC Power Sources and Plug Type describes the power sources and required AC input power.

AC Power Sources and Plug Type		
Power Distribution Unit	**Power Sources**	**Power Input**
AC power distribution (J58890CE-1 and J58890CE-2) Multi-Carrier Cabinet	Single-phase 120 VAC with neutral Single-phase 240 VAC with neutral, or single phase of 3-phase, 208 VAC with neutral	120 VAC, 60 Hz NEMA 5-50R 208-240 VAC, 60 Hz NEMA L14-30R
AC power distribution (J58890CH-1) Multi-Carrier Cabinet	Single-phase 176-264 VAC	200-240 Volts, 50-60 Hz NEMA L6-30R. Installations outside the United States require a receptacle suitable for use in the country of installation.

Note:
The type of power required is shown on the cabinet's rear door.

Grounding an AC-Powered System (J58890CE)

Grounding is relatively simple for an AC-powered system. Basically, the cabinets connect to the single-point ground terminal block located at either the AC load center or to a separate single-point ground block wired to the AC load center (or optional AC protector cabinet).

- The approved ground wire must be a green (or green with yellow stripe), 6 AWG (#40) (16 mm^2), copper, stranded wire.
- Bond all approved grounds at the single-point ground to form a single grounding electrode system.

Ground AC Load Center 50 ft (15.2 m) or Less from Cabinet

Begin

Return to Task List

1. At the bottom rear of the PPN cabinet, connect a 6 AWG (#40) (16 mm^2) CABINET GROUND wire to the cabinet ground terminal block. See Typical Cabinet Ground Location.
2. Route the CABINET GROUND wire to the single-point ground block at the AC load center and connect.
3. At the bottom rear of the first EPN cabinet (if provided), connect a 6 AWG (#40) (16 mm^2) CABINET GROUND wire to the cabinet ground terminal block.
4. Route the CABINET GROUND wire to the single-point ground block at the AC load center and connect.

Note:
If the EPN cabinet is located remote from the PPN cabinet (in a separate room or building), connect the CABINET GROUND wire to an approved ground.

5. Repeat connecting each EPN cabinet to the single-point ground block.

6 At the AC load center, connect a 10 AWG (#25) (6 mm^2) wire to the single-point ground block. This ground wire will later be tie-wrapped to the trunk cables and connected to the Coupled Bonding Conductor (CBC) ground block at the MDF.

The Coupled Bonding Conductor (CBC) wires are installed and terminated in Install Telecommunications Cabling.

Typical Cabinet Ground Location

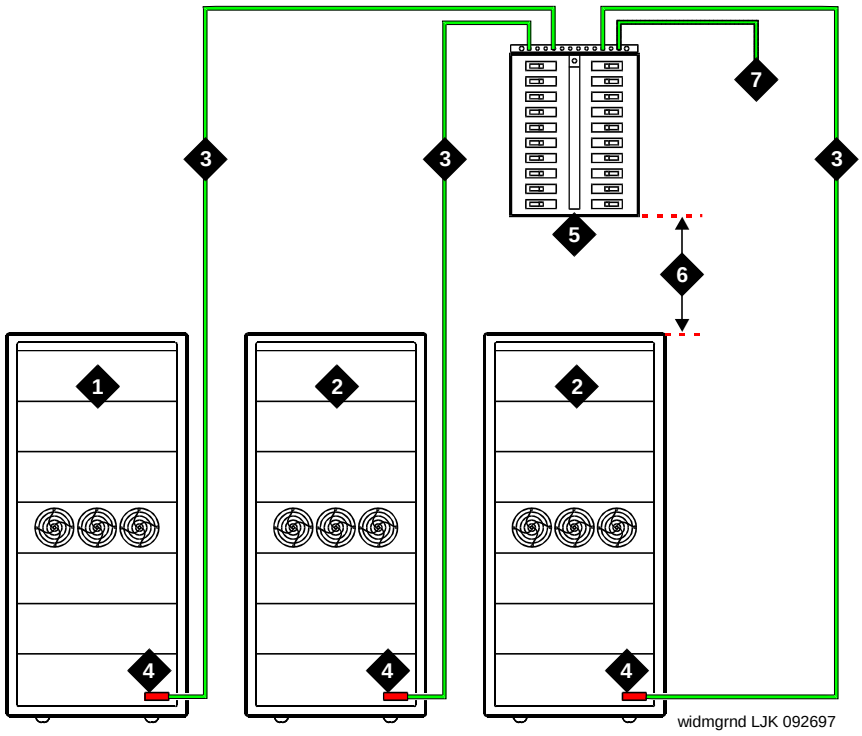


Figure Notes:

[1] PPN Cabinet

[2] EPN Cabinet (if Installed)

[3] 6 AWG (#40) (16 mm^2) CABINET GROUND Wire

[4] Cabinet Ground Terminal Block

[5] AC Load Center Single-Point Ground

[6] Less than 50 Wire feet (15.2 m)

[7] 10 AWG (#25) (6 mm^2) Ground Wire to CBC

Return to Task List

Ground AC Load Center More Than 50 ft (15.2 m) from Cabinet

Begin

Return to Task List

1 Mount the single-point ground block to any surface between the MCC cabinets and the AC load center single-point ground. The single-point ground block must be mounted to a non-metallic surface.

2 At the bottom rear of the PPN cabinet, connect a 6 AWG (#40) (16 mm^2) CABINET GROUND wire to the cabinet ground block. See Typical Cabinet Grounding Wiring Diagram.

3 Route the opposite end of the wire to the single-point ground block and connect.

4 At the first EPN cabinet (if provided) DC Power Cabinet, connect a the 6 AWG (#40) (16 4 mm^2) CABINET GROUND wire to the cabinet ground terminal block GROUND DISCHARGE bar.

5 Route the CABINET GROUND wire to Control Cabinet and connect to the single-point ground block.

Note:

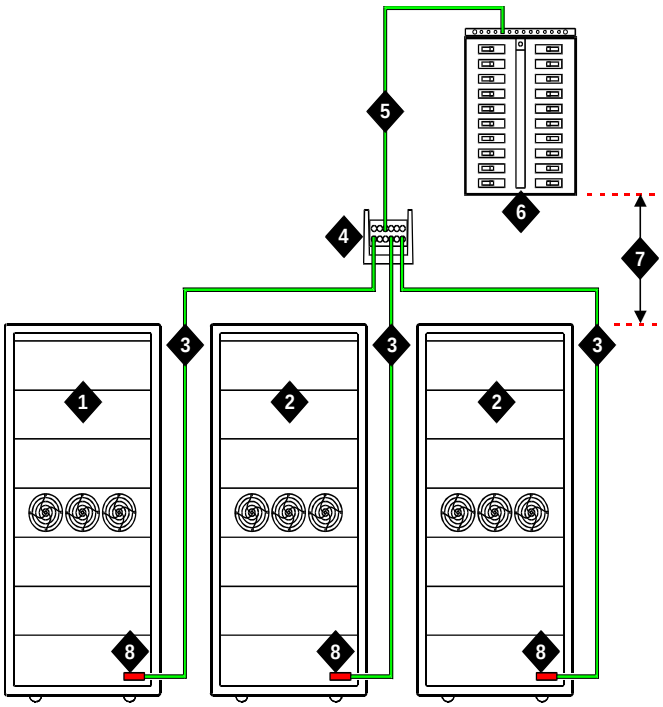
If the EPN cabinet is located remote from the PPN cabinet (in a separate room or building), route the EPN CABINET GROUND wire to an approved protective ground.

6 Repeat connecting each EPN cabinet to the single-point ground block.

7 Connect a 6 AWG (#40) (16 mm^2) ground wire to an unused terminal on the single-point ground block.

8 Route the ground wire to the AC load center ground and connect.

Typical Cabinet Grounding Wiring Diagram



widfspgb KLC 100297

Figure Notes:

[1] PPN Cabinet

[2] EPN Cabinet (if Installed)

[3] 6 AWG (#40) (16 mm^2) CABINET GROUND Wire

[4] Single-Point Ground Block

[5] 6 AWG (#40) (16 4 mm^2) Ground Wire to Approved Ground

[6] AC Load Center Single-Point Ground

[7] Over 50 ft (15.2 m)

[8] Cabinet Ground Terminal Block

Return to Task List

Connect Battery Leads (J58890CH-1)

Begin

Return to Task List

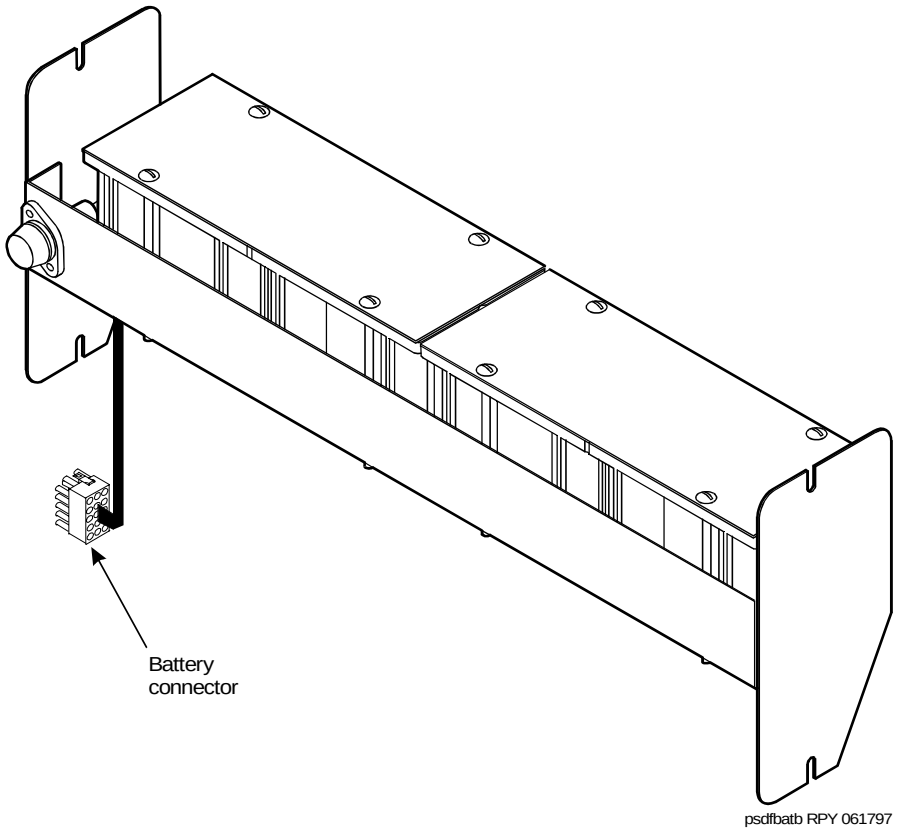
Typical Small Battery Assembly shows a typical optional small battery holdover assembly. These assemblies may ship with the battery leads disconnected to prevent the batteries from discharging.

1. Plug the battery connector into the -48 VDC Batteries connector on the rear of the J58890CH-1 Power Distribution Unit.

CAUTION:
Power is present in the cabinet even if the AC power cable is unplugged. When procedures require ALL power to be removed from the cabinet and to prevent unnecessary discharging of the battery, turn off the main circuit breaker located on the front of the power distribution unit.

2. Be sure the main power to the power distribution unit is OFF.
3. At the power distribution unit, set all carrier circuit breakers OFF.

Typical Small Battery Assembly



Return to Task List

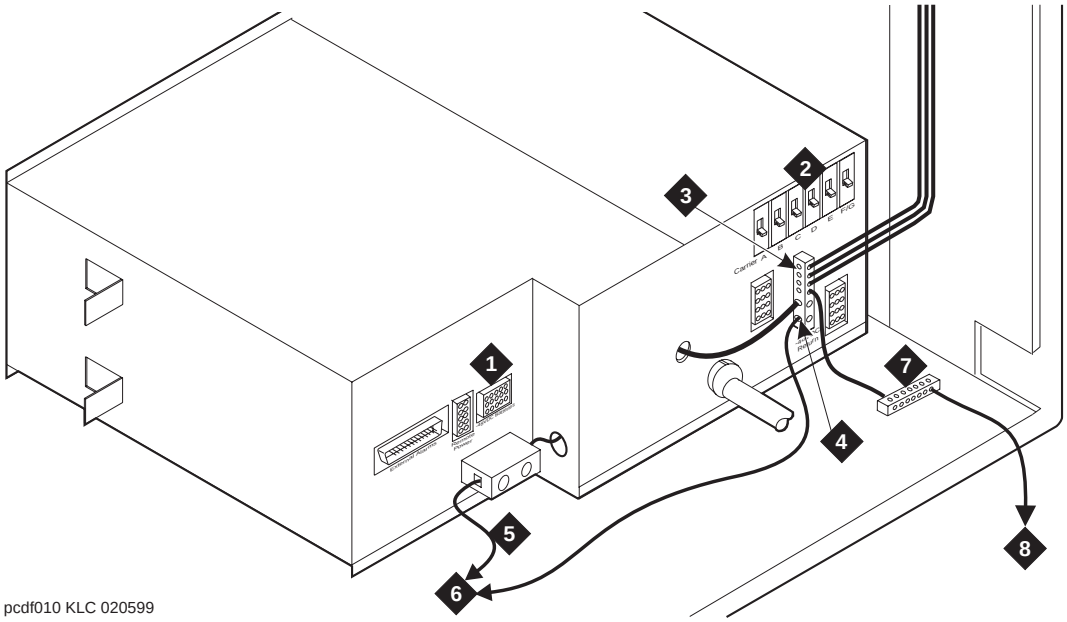
Connect Small Battery Holdover

Begin

Return to Task List

Connect the small battery holdover cable to J20. See Power Distribution Unit (J58890CH).

Power Distribution Unit (J58890CH)



pcdf010 KLC 020599

Figure Notes:

[1] Connect small battery holdover cable (or temperature sensor cable from large battery cabinet) to J20

[2] Carrier Circuit Breakers

[3] Ground Terminal Block

[4] Connect -48 VDC Return - 1 AWG (50 mm^2) red cable here.

[5] Connect -48 VDC - 1 AWG (50 mm^2) black cable

[6] 1 AWG (50 mm^2) 50 ft (15.2 m) cable to large battery cabinet. For cables greater than 50 ft (15.2 m), contact your Avaya representative.

[7] Ground Terminal Block

[8] To AC load center or approved single-point ground block

Return to Task List

Connect Large Battery Holdover

Begin

Return to Task List

When using large battery holdover, 1 battery cabinet is required for every system cabinet requiring holdover. The 24-cell battery cabinet must have a float voltage of 54.2 VDC.

1. Connect the -48 VDC cable to the large battery connector. See Power Distribution Unit (J58890CH).
2. Connect the -48 VDC RETURN cable to the ground terminal block.
3. Connect the temperature sensor cable, from the battery cabinet, to J20.

Note:
An adapter cable may be required when connecting the temperature sensor cable to the J58890CH unit. See Temperature Sensor Cable Adapter Cables.

Power Distribution Unit (J58890CH)

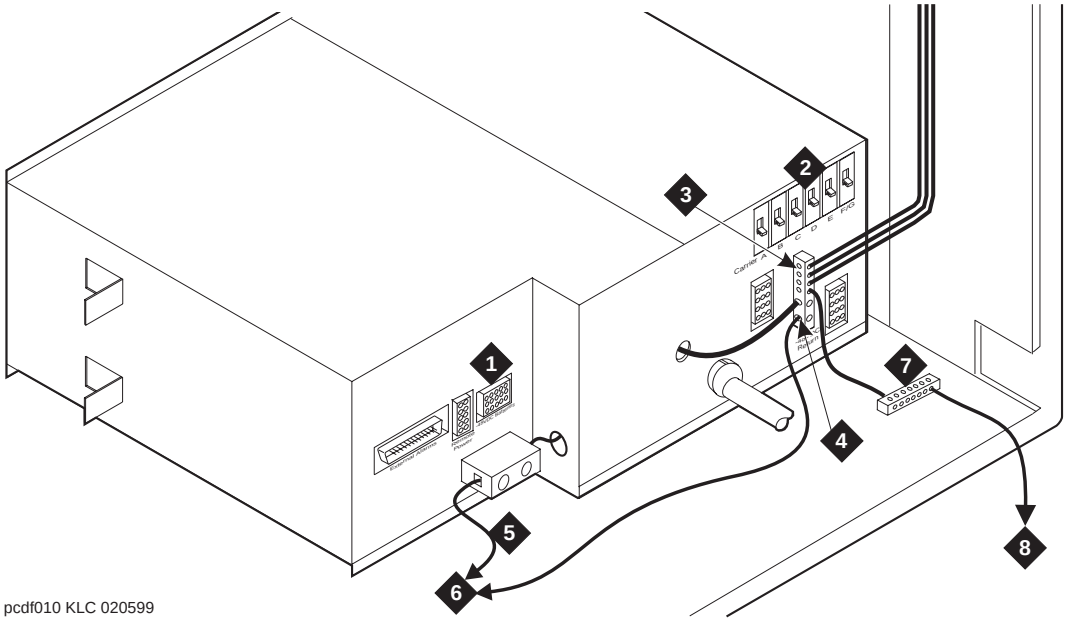


Figure Notes:

[1] Connect small battery holdover cable (or temperature sensor cable from large battery cabinet) to J20

[2] Carrier Circuit Breakers

[3] Ground Terminal Block

[4] Connect -48 VDC Return - 1 AWG (50 mm^2) red cable here.

[5] Connect -48 VDC - 1 AWG (50 mm^2) black cable

[6] 1 AWG (50 mm^2) 50 ft (15.2 m) cable to large battery cabinet. For cables greater than 50 ft (15.2 m), contact your Avaya representative.

[7] Ground Terminal Block

[8] To AC load center or approved single-point ground block

Temperature Sensor Cable Adapter Cables	
H600-476 Adapter Cable	**Usage**
Group 1 (G1)	24-cell customer-provided battery
Group 3 (G3) (included with battery cabinet)	24-cell Avaya battery

Return to Task List

Connect Shorting Cable to J58890CE-2

Begin

Return to Task List

CAUTION:
For a cabinet with a battery charger, read the caution label on the 397C battery charger before disconnecting batteries.

Some cabinets contain a J58890CE-2 AC Power Distribution Unit without an optional battery charger. Install the shorting cable only when a battery charger is *not* installed. If you do not install the shorting cable or a battery charger, then an alarm appears.

1. Set the circuit breakers on the power distribution unit OFF. See Shorting Cable Installation.
2. At the rear of the cabinet, insert the shorting cable (H600-442-G1) into J11. The cable is keyed so it can fit only 1 way.

Shorting Cable Installation

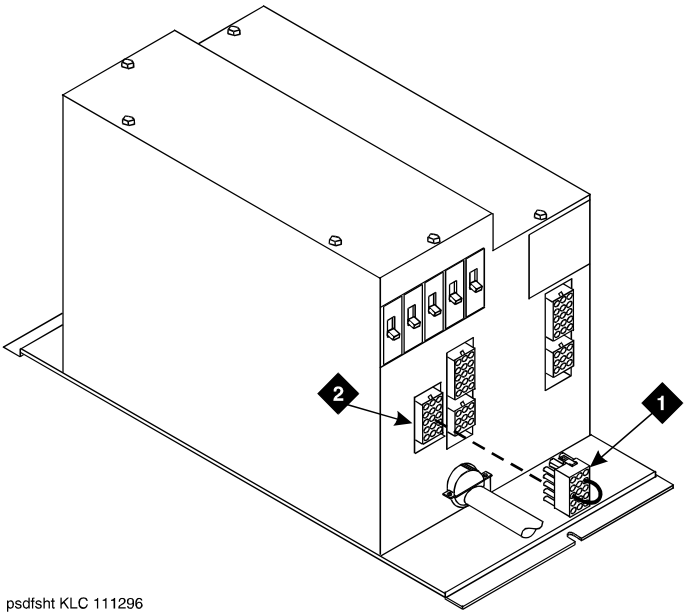


Figure Notes:

[1] Shorting Cable (H600-442-G1) (If Battery Charger is Not Installed)

[2] J11

Return to Task List

Connect AC Power

Begin

Return to Task List

1. Set the main circuit breakers on the power distribution unit OFF.
2. Connect cabinet AC line cords to the AC power receptacles.

Note:
Do not power up the system at this time.

Connect DC Power and Ground

Return to Task List

CAUTION:
Grounding of the system shall comply with the general rules for grounding contained in Article 250 of the National Electrical Code, NFPA 70. For more information, refer to Approved Grounds.

The grounding methods for the DC-powered system are more complex than that of an AC-powered system.

Typical Power and Ground for a DC-Powered Cabinet shows a typical power and ground layout for a DC-powered cabinet. The size of the wire required for the -48 volt DC and -48 volt return must ensure the voltage supplied by the battery plant is maintained between -42.5 and -54.2 volts DC at all times for proper operation and to prevent hardware damage. The wire must be sized for a maximum voltage drop of 0.5 VDC in each leg of the DC distribution. This procedure applies to both PPN and EPN cabinets.

Task List: Connect DC Power and Ground

Perform these tasks to connect DC power and ground, power distribution unit (J58890CH-1 Only):

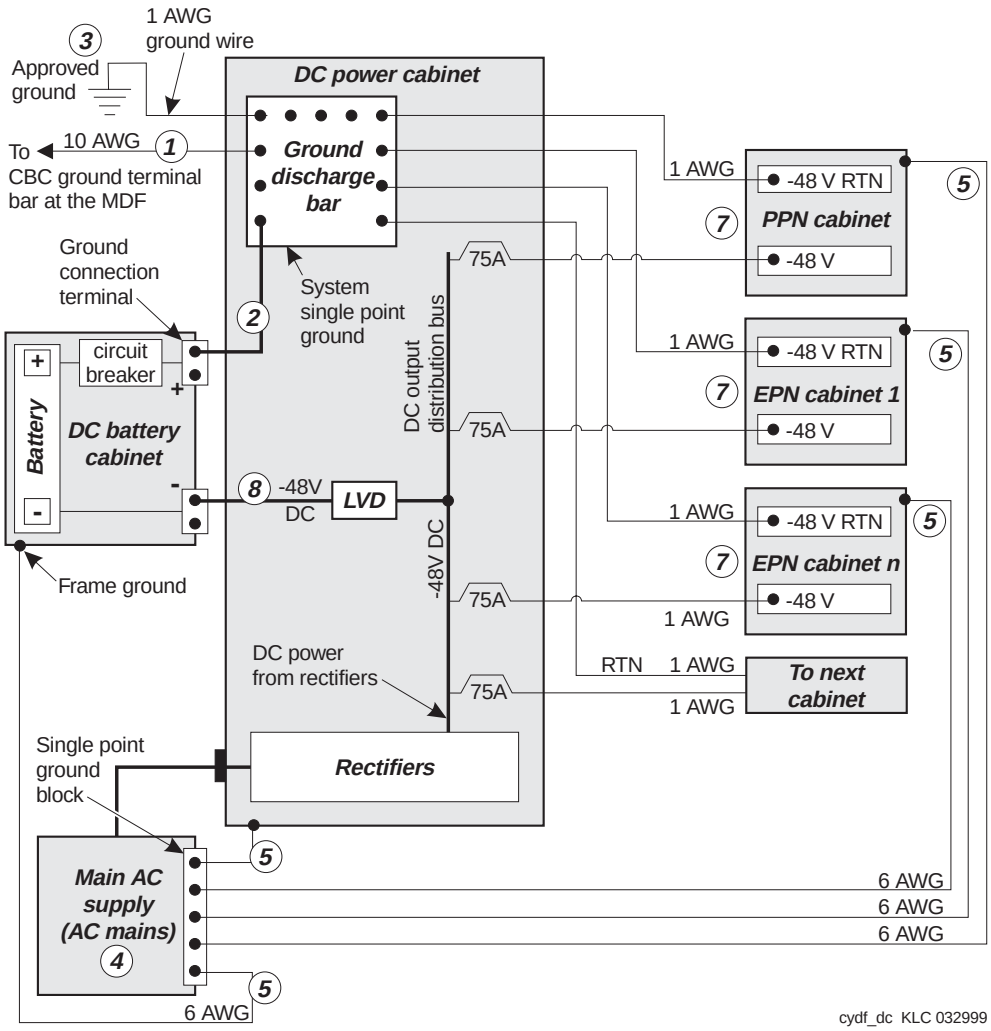
1. Install Rectifier Modules and Battery Interface Unit
2. Connect Power and Ground(s)

Perform these tasks to connect DC Power and Ground (J58890CF Only):

Note:
These installation tasks correspond to the numbers in Typical Power and Ground for a DC-Powered Cabinet:

1. Install Coupled Bonding Conductor Wires
2. Connect DC Battery and Power Cabinet Grounds
3. Connect DC Power Cabinet Approved Ground
4. Connect AC Power to DC Power Cabinet
5. Connect Ground Wires for DC-Powered Systems
6. Turn Circuit Breakers Off
7. Connect DC Power to PPN and EPN Cabinets
8. Connect DC Battery Cabinet to DC Power Cabinet
9. If necessary, Connect Mixed AC/DC Power and Ground

Typical Power and Ground for a DC-Powered Cabinet



Return to Task List

Install Rectifier Modules and Battery Interface Unit

Begin

Return to Task List

Each rectifier module operates as an integral part of a complete power system with battery backup. The modules operate in a redundant, high reliability mode to provide -48 VDC at 850 Watts to a common power bus.

The Battery Interface Unit (BIU) controls the rectifier modules, manages the batteries, and reports the status of system power. The BIU provides the Remote Power Off (RPO) option and battery alarm interfaces for internal and external alarms.

1. Install the BU3200A Battery Interface Unit in the first slot of the power distribution unit. See Rectifier Module Installation.

Note:
The BIU and the rectifier modules are keyed and can only install 1 way.

2. Install the first 2 RM0850HA100 Rectifier Modules into the second and third slots of the power distribution unit.
3. If 2 to 3 carriers are installed in the system, install a third rectifier module (N+1).
4. If 4 to 5 carriers are installed in the system, install a fourth rectifier module.

5 The fifth rectifier module slot is reserved for future system growth.

Rectifier Module Installation

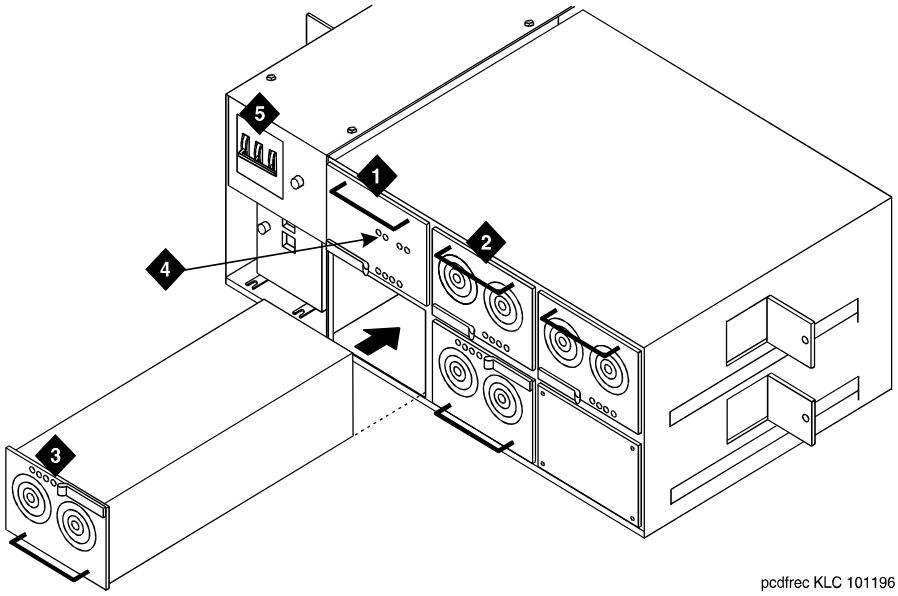


Figure Notes:

[1] Install Battery Interface Unit into Slot 1

[2] Install Rectifier Modules into Slots 2-5

[3] Rectifier Module 3 (in Slot 4)

[4] Test Points

[5] Main Circuit Breakers

Return to Task List

Connect Power and Ground(s)

Begin

Return to Task List

1 Have a qualified electrician connect and route wires from the AC load center to the dedicated electrical outlet for the power distribution unit.

Connect PPN Cabinet Ground:

2 Connect 1 end of a 6 AWG (#40) (16 mm^2) wire to the ground terminal block on the rear of the cabinet. See Power Distribution Unit (J58890CH).

3 Route the CABINET GROUND wire to the AC load center single-point ground block and connect.

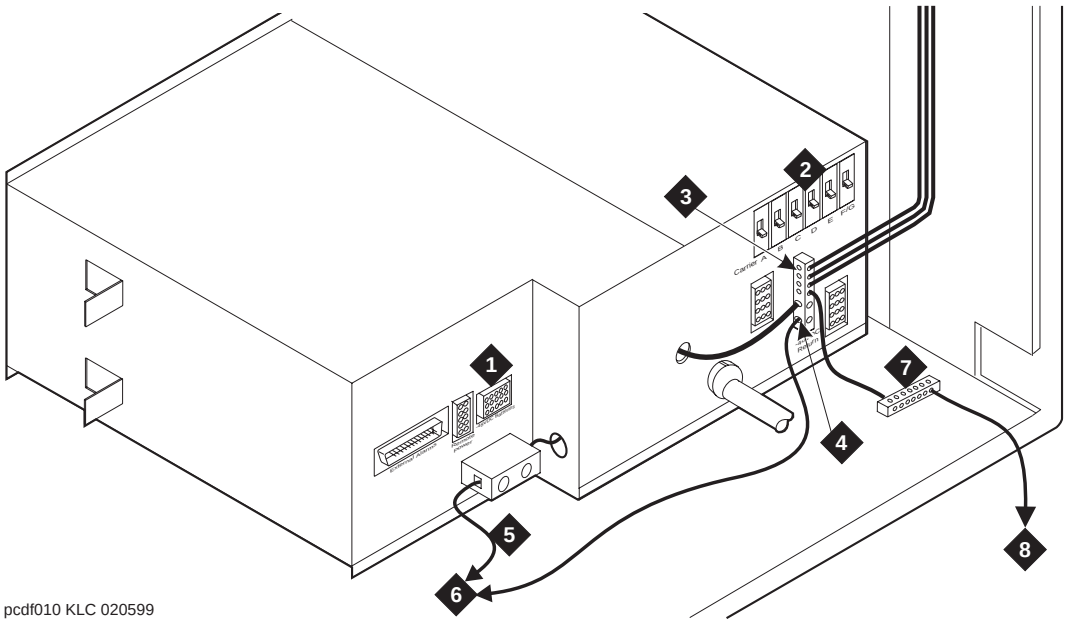
Connect EPN Cabinet Ground(s)

4 Connect 1 end of a 6 AWG (#40) (16 mm^2) CABINET GROUND wire to the ground terminal block at the bottom rear of the EPN cabinet. See Typical Cabinet Grounding Wiring Diagram.

5 Route the CABINET GROUND wire to the AC load center single-point ground and connect.

6 Connect each remaining EPN cabinet to the AC load center single-point ground.

Power Distribution Unit (J58890CH)



pcdf010 KLC 020599

Figure Notes:

[1] Connect small battery holdover cable (or temperature sensor cable from large battery cabinet) to J20

[2] Carrier Circuit Breakers

[3] Ground Terminal Block

[4] Connect -48 VDC Return - 1 AWG (50 mm^2) red cable here.

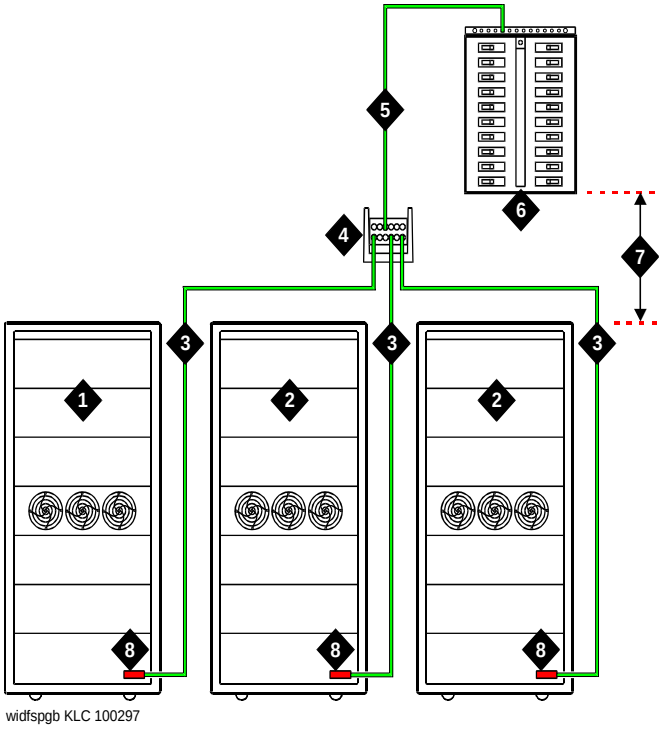
[5] Connect -48 VDC - 1 AWG (50 mm^2) black cable

[6] 1 AWG (50 mm^2) 50 ft (15.2 m) cable to large battery cabinet. For cables greater than 50 ft (15.2 m), contact your Avaya representative.

[7] Ground Terminal Block

[8] To AC load center or approved single-point ground block

Typical Cabinet Grounding Wiring Diagram



widfspgb KLC 100297

Figure Notes:

[1] PPN Cabinet

[2] EPN Cabinet (if Installed)

[3] 6 AWG (#40) (16 mm2) CABINET GROUND Wire

[4] Single-Point Ground Block

[5] 6 AWG (#40) (16 4 mm2) Ground Wire to Approved Ground

[6] AC Load Center Single-Point Ground

[7] Over 50 ft (15.2 m)

[8] Cabinet Ground Terminal Block

Return to Task List

Install Coupled Bonding Conductor Wires

Begin

Return to Task List

This is a conductor that connects to the single-point ground block and run adjacent to pairs in an associated cable. The mutual coupling between the CBC and the pairs reduces potential differences in terminating equipment. The conductor consists of a 10 AWG (#25) (6 mm^2) wire terminated at the CBC ground terminal bar at the Main Distribution Frame (MDF).

1. At the DC Power Cabinet, connect a 10 AWG (#25) (6 mm^2) ground wire to the Ground Discharge Bar. See Typical Power and Ground for a DC-Powered Cabinet.
2. Route the 10 AWG (#25) (6 mm^2) ground wire to the CBC ground terminal bar at the MDF. Be sure a minimum of 12 in. (30.5 cm) spacing is maintained between the CBC and other power and ground leads.

3 Tie wrap the ground wire to the inside wiring cable.

Note:
The ground wires are connected to the CBC as instructed in Install Telecommunications Cabling.

Return to Task List

Connect DC Battery and Power Cabinet Grounds

Begin

Return to Task List

Note:
The wire in the next step must be sized for a maximum voltage drop of 0.5 VDC in each leg of the DC distribution. In this example 1 AWG is used.

1 Measure and cut a minimum of a 1 AWG (#70) (44 mm^2) wire long enough to reach between the ground connection terminal in the DC Battery Cabinet and the Ground Discharge Bar in the DC Power Cabinet. See Typical Power and Ground for a DC-Powered Cabinet.

2 Crimp terminal lugs on each end of the wire. Terminal lugs are furnished as part of D-181895, Kit of Parts.

3 At the DC Power Cabinet, connect the wire to the Ground Discharge Bar.

4 Route the wire through 1 of the holes in the side of the cabinets and terminate it on the Ground Connection Terminal in the DC Battery Cabinet.

Return to Task List

Connect DC Power Cabinet Approved Ground

Begin

Return to Task List

Note:
The wire must be at least as large as the largest distribution wire in the system (required by UL). In this example 1 AWG is used.

1 At the DC Power Cabinet, connect a 1 AWG (#70) (44 mm^2) ground wire to the Ground Discharge Bar. See Typical Power and Ground for a DC-Powered Cabinet.

2 Route the ground wire out of the cabinet and terminate it on the approved ground. The approved ground must be identified with a grounding tag (FORM 15657NR or equivalent). See Approved Grounds.

Return to Task List

Connect AC Power to DC Power Cabinet

Begin

Return to Task List

This procedure applies to both the Processor Port Networks (PPN) and Expansion Port Networks (EPN).

CAUTION:
Power is present in the cabinet even if the AC power cable is unplugged. Turn off the main circuit breaker on the front of the cabinet when procedures require ALL power to be removed from the cabinet.

1. Ensure the associated circuit breakers at the AC power panel are OFF.
2. Have an electrician connect AC power leads to the rectifiers using the instructions provided with the rectifiers in the DC Power Cabinet. Each rectifier should have its own branch circuit. Terminate leads on the AC INPUT terminal block of each rectifier.

Return to Task List

Connect Ground Wires for DC-Powered Systems

Begin

Return to Task List

CAUTION:
Do not connect any ground wires from an EPN cabinet to another EPN cabinet or to a PPN cabinet. All ground wires must be terminated at the single-point ground block at the main AC supply (AC mains).

1. Connect a 6 AWG (#40) (16 mm^2) wire to the PPN cabinet ground terminal block.
2. Route the wire to the AC mains single-point ground block and connect.
3. Connect a 6 AWG (#40) (16 mm^2) wire to each EPN's cabinet ground terminal block.
4. Route the wire(s) to the AC mains single-point ground block and connect.
5. Connect a 6 AWG (#40) wire to the DC battery cabinet and DC power cabinet.
6. Route wires to the AC mains single point ground block and connect them.

Return to Task List

Turn Circuit Breakers Off

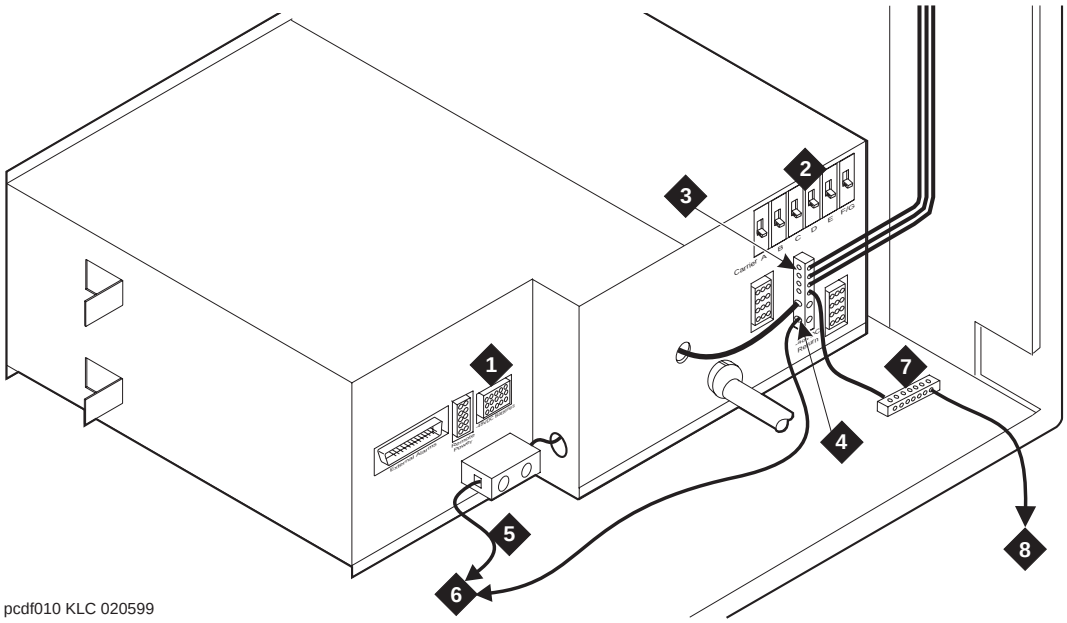
Begin

Return to Task List

The main circuit breaker on a DC-powered PPN/EPN cabinet is located on the front of the power distribution unit. The circuit breakers on the rear of the power distribution unit control the individual carriers. See Power Distribution Unit (J58890CH) for the location of the carrier breakers.

1. Set the main circuit breaker to **OFF**.
2. Set the carrier circuit breakers to **OFF**.

Power Distribution Unit (J58890CH)



pcdf010 KLC 020599

Figure Notes:

[1] Connect small battery holdover cable (or temperature sensor cable from large battery cabinet) to J20

[2] Carrier Circuit Breakers

[3] Ground Terminal Block

[4] Connect -48 VDC Return - 1 AWG (50 mm^2) red cable here.

[5] Connect -48 VDC - 1 AWG (50 mm^2) black cable

[6] 1 AWG (50 mm^2) 50 ft (15.2 m) cable to large battery cabinet. For cables greater than 50 ft (15.2 m), contact your Avaya representative.

[7] Ground Terminal Block

[8] To AC load center or approved single-point ground block

Return to Task List

Connect DC Power to PPN and EPN Cabinets

Begin

Return to Task List

1. Be sure the main circuit breaker is OFF.
2. Measure and cut 2 pieces of 1 AWG (#70) (44 mm^2) wire long enough to reach from the DC Power Cabinet to the PPN cabinet.
3. At the DC Power Cabinet, connect the -48 volt DC wire to the DC OUTPUT circuit breaker. See Typical Power and Ground for a DC-Powered Cabinet. Connect the -48 volt RTN (return) wire to the ground discharge bar.
4. Route the wires out of the cabinet, through the hole in the lower rear cover, and to the PPN cabinet.
5. Connect the -48 volt DC wire to the -48VDC terminal on the J58890CF Power Distribution Unit.
6. Connect the -48 volt RTN wire to the -48RTN terminal on the J58890CF Power Distribution Unit terminal block.

7 Repeat Steps 2 through 6 for each EPN and Auxiliary cabinet in the system.

Return to Task List

Connect DC Battery Cabinet to DC Power Cabinet

Begin

Return to Task List

Note:
The wire in the next step must be sized for a maximum voltage drop of 0.5 VDC in each leg of the DC distribution. In this example 1 AWG is used.

1 Turn off the main circuit breaker on the DC Battery Cabinet.

2 Turn off the main circuit breaker on the DC Power Cabinet.

3 Measure and cut a 6 AWG (#40) (16 mm^2) wire long enough to reach from the DC Battery Cabinet's -48 Volt DC terminal to a DC OUTPUT distribution bus on the DC Power Cabinet.

4 At the DC Battery Cabinet, connect the -48 volt DC wire to the -48 VDC connector.

5 Route the wire out of the cabinet through the hole in the lower rear cover and to the DC Power Cabinet.

6 At the DC Power Cabinet, terminate the -48 volt DC wire on a DC OUTPUT distribution bus.

Return to Task List

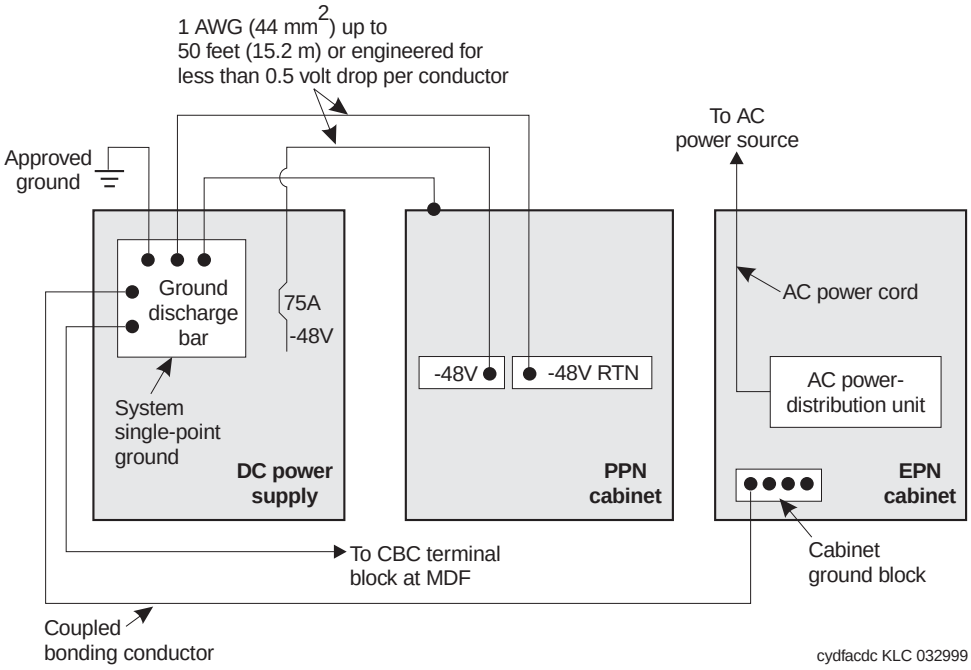
Connect Mixed AC/DC Power and Ground

Begin

Return to Task List

Typical Power and Ground for a Mixed AC/DC-Powered Cabinet shows a power and ground layout for a mixed AC/DC-powered cabinet configuration in the same equipment room with the PPN being DC powered and the EPN being AC powered. If a second EPN is part of the system, use the same basic connections.

Typical Power and Ground for a Mixed AC/DC-Powered Cabinet



Return to Task List

Connect Remote Power Off Cable

Begin

Return to Task List

Remote Power Off Cable Connections — Part 1 shows the location of the Remote Power Off (RPO) cable. The opposite end of the cable connects to the Emergency Power Off (EPO) switch located outside of the equipment room.

Even though the equipment room EPO switch disconnects main AC power to the equipment room, it cannot disconnect the battery power from the J58890CH. An auxiliary set of contacts inside the EPO are used for this function.

1. Plug the RPO cable into the connector shown in Remote Power Off Cable Connections — Part 1.
2. Route the opposite end of the wires to the EPO switch. The opposite end of the RPO cable connects to the internal relay.

Note:
The EPO switch and the auxiliary contacts (inside the EPO switch assembly) are customer-provided.

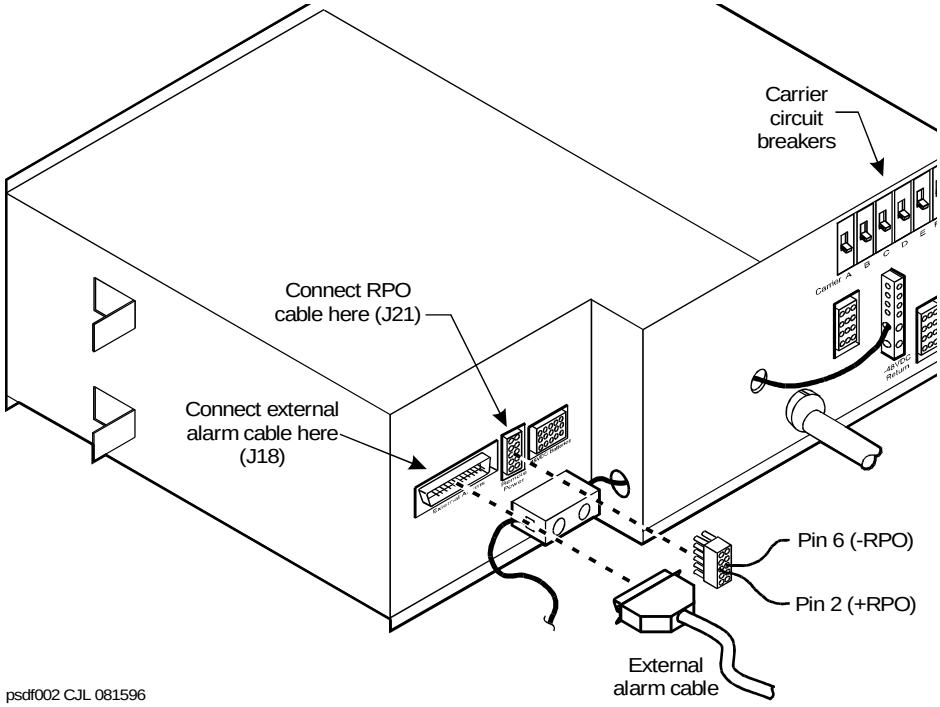
CAUTION:
The auxiliary contacts inside the EPO switch assembly must ***close*** when the switch is pressed. This contact closure energizes the relay inside the power distribution unit, causing the connection to the battery holdover assembly to open.

Remote Power Off Cable Connections — Part 2 shows the cabling from the auxiliary contacts inside the EPO switch assembly and how they connect to the internal relay.

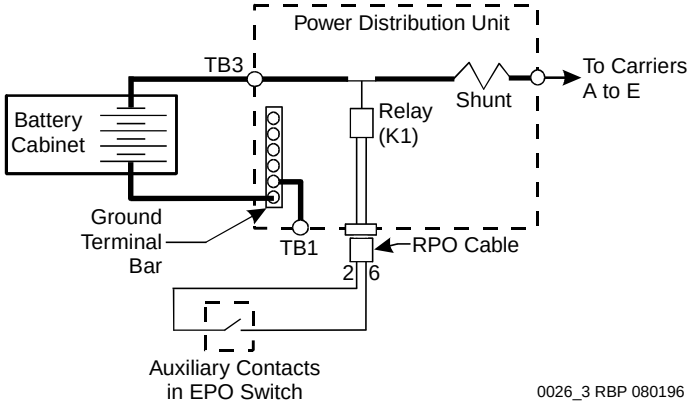
3. Connect the RPO wires to the auxiliary contacts on the EPO switch. See Remote Power Off Cable Connections — Part 2.

Note:
The EPO switch and the auxiliary contacts for the RPO connection are customer-supplied.

Remote Power Off Cable Connections — Part 1



Remote Power Off Cable Connections — Part 2



Return to Task List

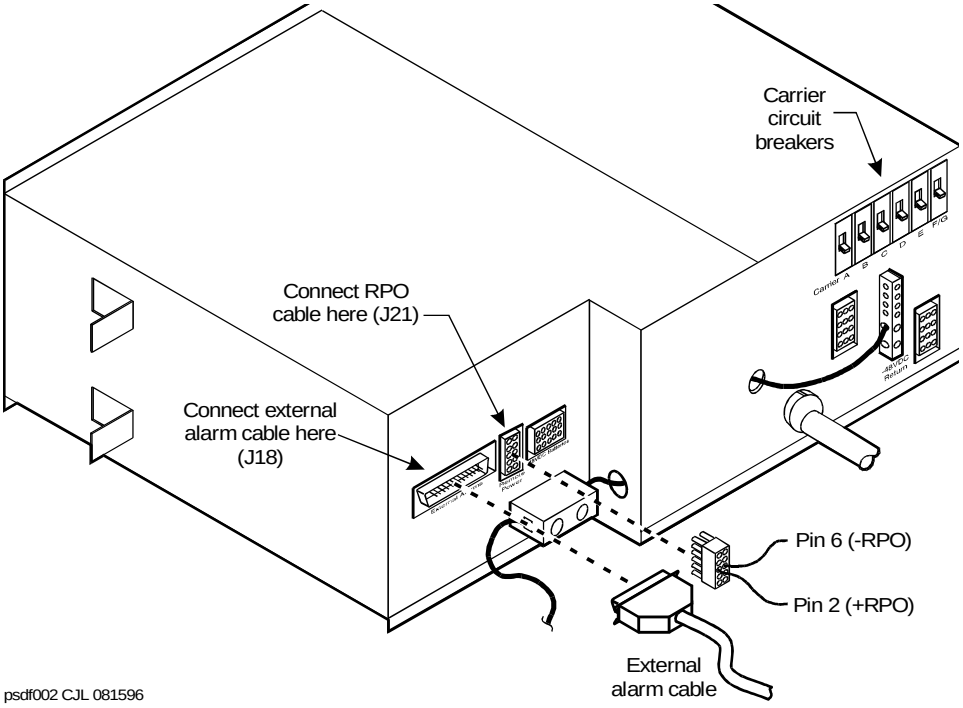
Connect External Alarm Cable

Begin

Return to Task List

1. Plug the external alarm cable into the connector shown in External Alarm Cable Connection.
2. Route the opposite end of the cable to the MDF. The alarm cable is connected to the MDF later.

External Alarm Cable Connection



Check Commercial Power and Connect AC Power

Begin

Return to Task List

Before powering up the system, check the AC power using a KS-20599 digital voltmeter (DVM) (or equivalent).

1. Set the DVM to the 250 volt range.
2. Carefully measure the voltage between the hot and neutral side of the receptacle. The neutral wire is white, the hot wire is black.
3. Verify the meter reads 106 to 128 VAC. If not, have a qualified electrician correct the problem.
4. Measure the voltage between the neutral and ground side of the receptacle. The ground wire is green.
5. Verify the meter reads 0 VAC. If not, have a qualified electrician correct the problem.
6. Set all cabinet power modules **OFF**. Plug the AC power cable into the receptacle.

Return to Task List

Verify Fiber Optic Duplication Interface Cabling (TN792 port networks)

Begin

Return to Task List

If the fiber optic duplicate interface cabling is not already installed, interconnect the A and B port networks (TN792) with the 14-in. fiber optic cable (see Fiber optic cable connecting the two duplication interface circuit packs).

Fiber optic cable connecting the two duplication interface circuit packs

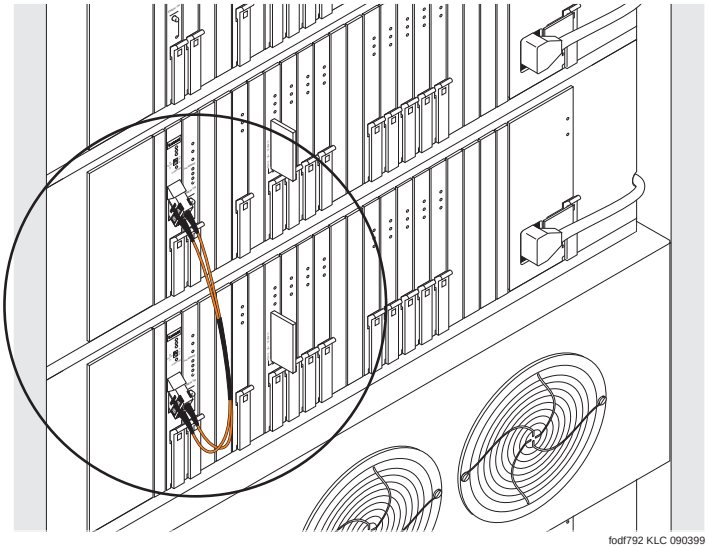


Figure Notes:

[1] AHF110 TDM Bus Terminator (Slot 17)

[2] TDM/Local Area Network (TDM/LAN) Pinfield (Slot 00)

[3] TDM Bus Cable WP-91716 L3

[4] Port Cabinet (Standard Reliability)

[5] Control Cabinet A Position

[6] AHF110 TDM Bus Terminator (Slot 03)

[7] Slot 18

Return to Task List

Connect Fiber Optic Interconnect Cabling

Return to Task List

Signals between the cabinets are carried by fiber optic cables. Lightwave transceivers provide the required fiber optic interface.

The fiber optic cables from the DEFINITY ECS route to a Lightguide Interconnect Unit (LIU) or fiber optic shelf. Go to Connecting and Handling Fiber Optic Cables for fiber optic equipment, connecting to LIUs or shelves, and routing through lightguide equipment.

Use multi-mode fiber transceivers and multi-mode fiber optic cables between cabinets unless single-mode fiber is required (distance restrictions). Use metallic cables between carriers.

⚠ CAUTION:
The DEFINITY ECS may contain a Class 1 LASER device if single-mode fiber optic cable is connected to a remote Expansion Port Network (EPN).

Make the required connections for the installation:

- Connect Fiber Optic Cables
- Connect Standard-Reliability CSS-Connected System with 1 Switch Node
- Connect High-Reliability CSS-Connected System with 1 Switch Node

- Connect Critical Reliability CSS-Connected System with 1 Switch Node

Connect Fiber Optic Cables

Begin

Return to Task List

Note:
Always use the Cable Running List that accompanies the system when installing fiber optic cables. The following procedure is a *typical* example of how to cable a system.

If the cabinets are close together, the signal may go through a single, directly-connected fiber optic cable. If the cabinets are far apart, it may be easier to connect the cabinets through an LIU or fiber shelf.

For each fiber indicated in the fiber optic Cable Running List:

1. Install a lightwave transceiver on the cabinet connector at the position in the FROM column in the running list.
2. Select a cable indicated by the CABLE CODE and LENGTH in the running list. Connect 1 of the fibers to each connector on the lightwave transceivers just installed. The fiber is numbered 1 or 2. The connector on the transceiver is labeled TX or RX. Keep track of which fiber connects to which transceiver connector. Label both ends of these cables.
3. Route the fiber optic cables from the transceiver out of the cabinet. Secure the cables to the cable-tie rack. Keep the fiber optic cables clear of the heavier I/O cables.
4. If the cabinet in the TO column in the running list is located remotely from the FROM cabinet, connect to the TO cabinet by way of the LIU.
5. Install a lightwave transceiver on the cabinet connector at the position in the TO column in the running list.
6. Route the cables from the FROM cabinet down into the cable trays of each EPN cabinet. Connect the cables to the lightwave transceiver just installed on the TO cabinet.
7. Connect the fiber that comes from the TX connector of the FROM transceiver to the RX connector of the TO transceiver and vice versa.
8. Route the cables through the cabinet and through cable organizers as provided. Secure the cables to the cable-tie rack.

Return to Task List

Connect Standard-Reliability CSS-Connected System with 1 Switch Node

Begin

Return to Task List

Standard Reliability CSS-Connected with 1 Switch Node shows typical fiber optic cabling between cabinets. The cable between the EI and SNI on the PPN is a pre-installed metallic cable (H600-278).

1. If no running list is available, use the outer slots first in alternating order. Connect the first 2 SNI slots to 3 and 20 (the leftmost and rightmost of the unused slots). Next, use 4 and 19, and so forth.
2. Add links to the EPNs in alternating order (20, 3, 19, 4, 18, 5, and so forth).

Standard Reliability CSS-Connected with 1 Switch Node

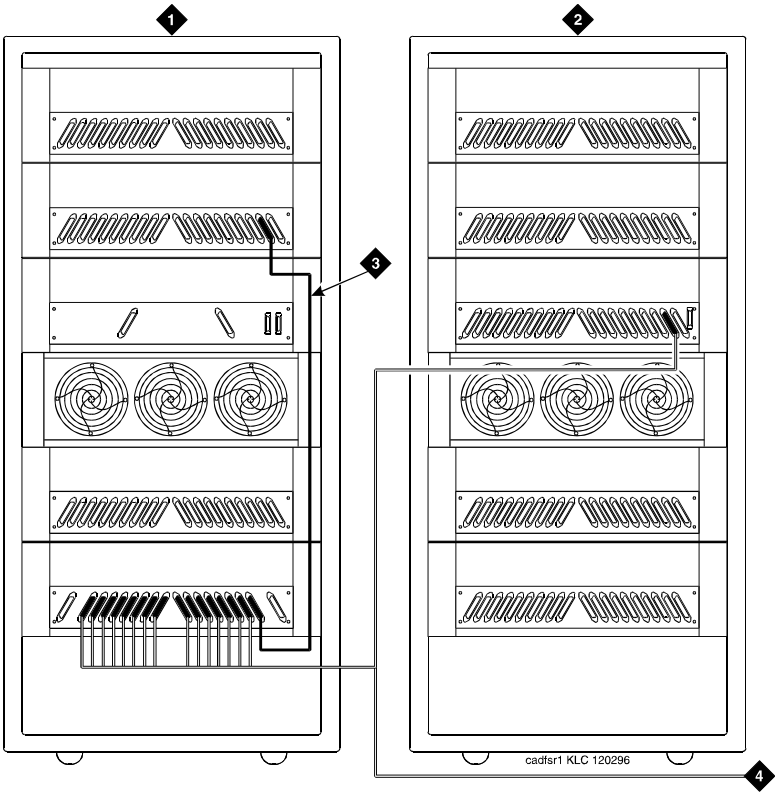


Figure Notes:

[1] Cabinet 1 (PPN with 1 Switch Node)

[2] Cabinet 2 through 16 (EPN)

[3] H600-278 Metallic Cable

[4] To other EPNs

Return to Task List

Connect High-Reliability CSS-Connected System with 1 Switch Node

Begin

Return to Task List

High-Reliability CSS-Connected with 1 Switch Node shows typical fiber optic cabling between cabinets. The cable between the EI and SNI on the PPN cabinet is a pre-installed metallic cable (H600-278).

Connect the cables between the PPN cabinet and each EPN cabinet in an alternating port slot order: 3, 19; 4, 18; 5, 17; and so forth. Cabinet 1 is a PPN with 1 Switch Node.

High-Reliability CSS-Connected with 1 Switch Node

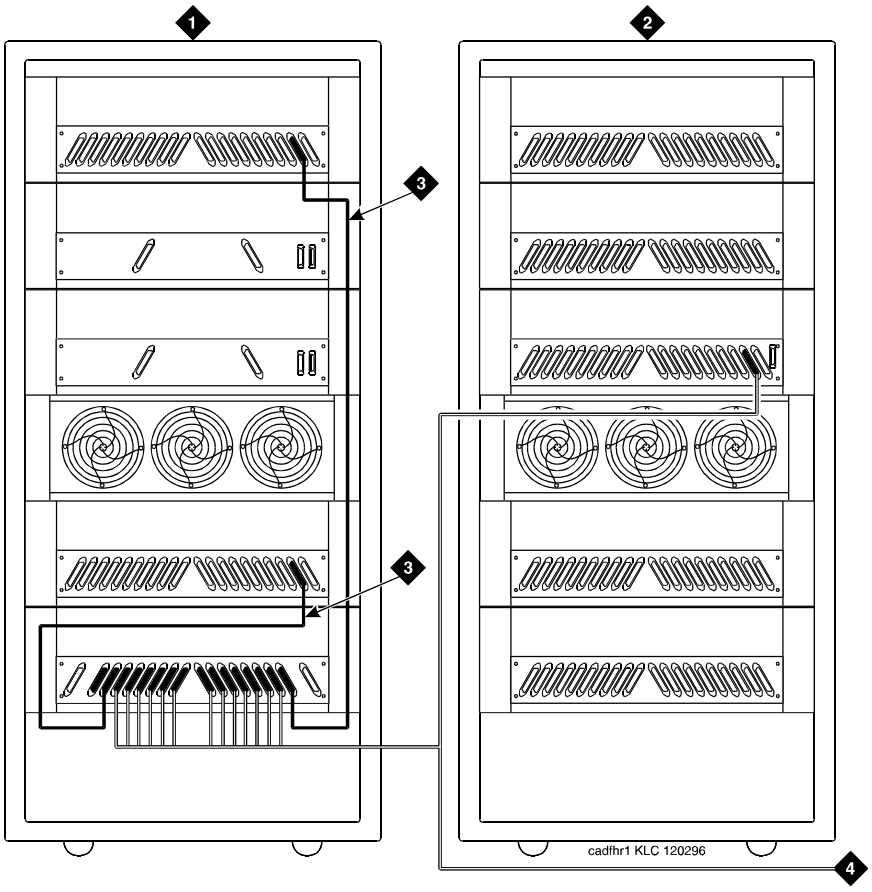


Figure Notes:

[1] Cabinet 1 (PPN with 1 Switch Node)

[2] Cabinet 2 through 15 (EPN)

[3] H600-278 Metallic Cable

[4] To other EPNs

Return to Task List

Connect Critical Reliability CSS-Connected System with 1 Switch Node

Begin

Return to Task List

Critical-Reliability CSS-Connected with 1 Switch Node shows typical fiber optic cabling between cabinets. The cable between port slots 1 and 2 on each switch node is a metallic cable (H600-278).

Connect the 2 groups of 1 to 15 cables between the PPN and each EPN in an alternating port slot order: 20, 3; 19, 4; 18, 5; and so forth.

Critical-Reliability CSS-Connected with 1 Switch Node

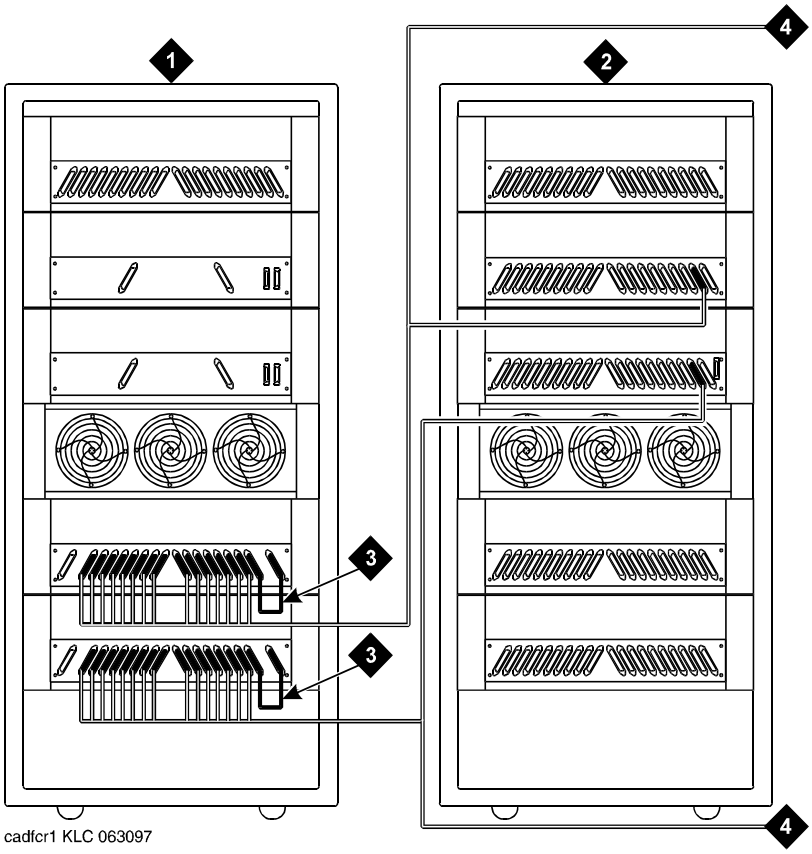


Figure Notes:

[1] Cabinet 1 (PPN with 1 Duplex Switch Node)

[2] Cabinet 2 through 16 (EPN)

[3] H600-278 Metallic Cable

[4] To other EPNs

Return to Task List

Install Telecommunications Cabling

This section provides both *information about* installing the telecommunications cabling and *procedures* for doing the installation.

Information about Installing the Cabling

- Provisioning Plan
- Main Distribution Frame (MDF) Hardware
- MDF Cross-Connect Fields
- Main Distribution Frame
- Main Distribution Frame Labels
- Off-Premises Circuit Protection
- Cable Installation
- Sneak Fuse Panels
- Coupled Bonding Conductor
- Installation Space Requirements for the sneak fuse panels, the 110-type hardware, and the Cable Slack Manager
- Station Wiring Design
- Station Circuit Distribution from Equipment Room
- Layout
- Patch Cord/Jumper Installation and Administration

Task List: Installing the Telecommunications Cabling

1. Label Control Carrier Cable
2. Connect Control Carrier Outputs Cable
3. Connect Trunk Pairs Using Concentrator Cables
4. Connect Trunk Pairs to Cabinet Using Jumper Wires To Establish 3-Pair Modularity
5. Install Cables Between Cabinet and MDF
6. Install Connector Cables Between Auxiliary Cabinet and MDF
7. Mount 110A- or 110P-type terminal blocks on the wall or Mount 110P-type terminal blocks on a frame
8. Install Cable Slack Managers
9. Install Sneak Fuse Panels
10. Install Coupled Bonding Conductor

Provisioning Plan

A provisioning plan should be completed prior to an installation. The plan determines an appropriate available port circuit on the Avaya Media Gateway for each telephone, trunk,

and peripheral connection needed, and any auxiliary power for Basic Rate Interface (BRI) and certain display sets.

The Port Assignment Record must have this information:

- Station or trunk type or feature/service
- Building location (floor/room/desk/outlet)
- Extension number or trunk group and member number
- Port circuit location on the system for each endpoint (cabinet/carrier/slot/circuit)
- Route from equipment room through equipment closets to each endpoint
- Auxiliary power supply, if required

Main Distribution Frame (MDF) Hardware

SYSTIMAX 110-type hardware is used for the Main Distribution Frame (MDF). 110-type hardware is available in two basic types: the 110A and 110P. The 110A requires less wall space than the 110P. The 110P includes horizontal and vertical cable troughs for managing cross-connect cables. The system is connected to the MDF with the supplied B25A male to female 25-pair cables. The cables are provided in 10-foot (3 m) and 15-foot (4.5 m) lengths.

Example MDF Connections (SCC1-Single-Carrier Cabinet shows a detailed example of Single-Carrier Cabinet cables connecting system cabinets and satellite closets to the Main Distribution Frame (MDF). The figure shows the cross-connections for one example station circuit.

Example MDF Connections (MCC1-Multicarrier Cabinet) shows the cross-connections for common circuit packs. Refer to this figure when cross-connecting wire pairs to the MDF.

Example MDF Connections (SCC1-Single-Carrier Cabinet

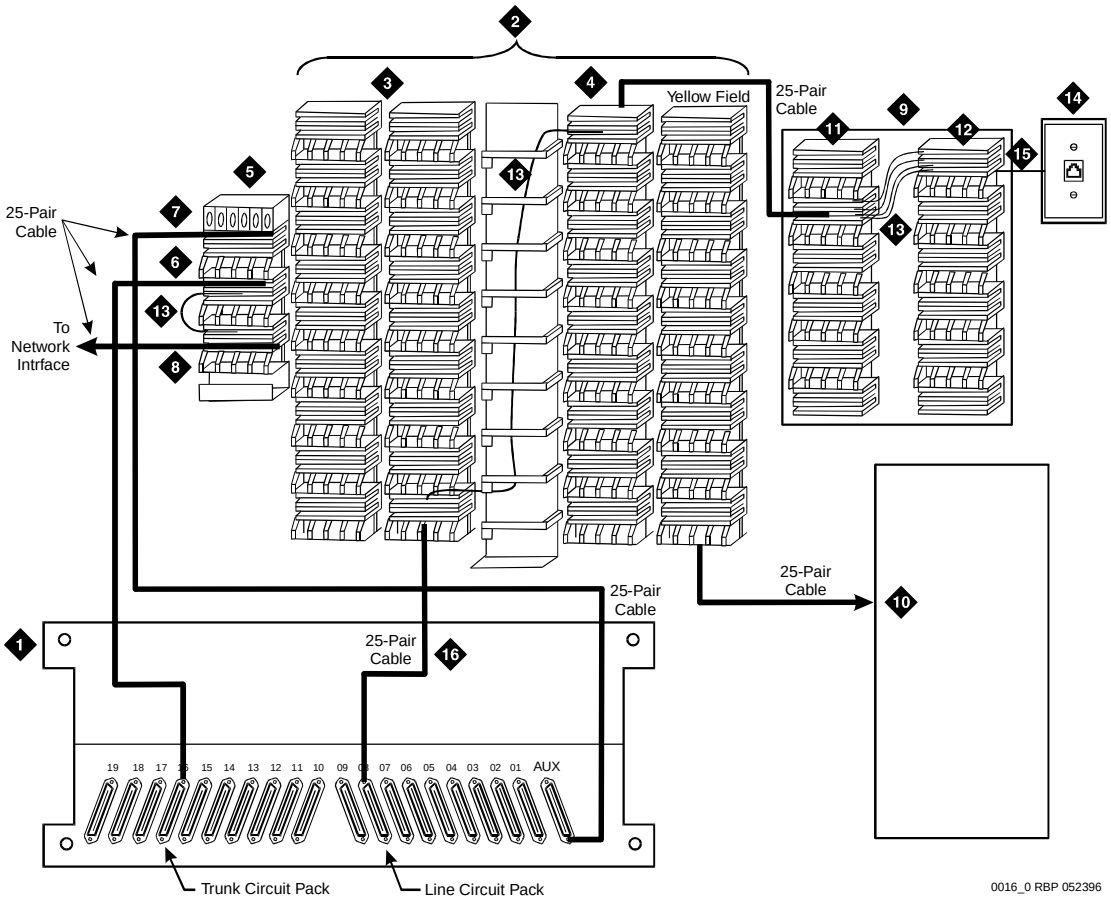


Figure Notes

[1] Rear of Port Cabinet

[2] Main Distribution Frame (MDF)

[3] Port Distribution Field (Purple Field)

[4] Station Distribution Field (White Field)

[5] Trunk/Auxiliary Field

[6] Purple Field

[7] Yellow Field

[8] Green Field

[9] Satellite Closet

[10] Auxiliary Cabinet (Yellow Field)

[11] White Field

[12] Blue Field

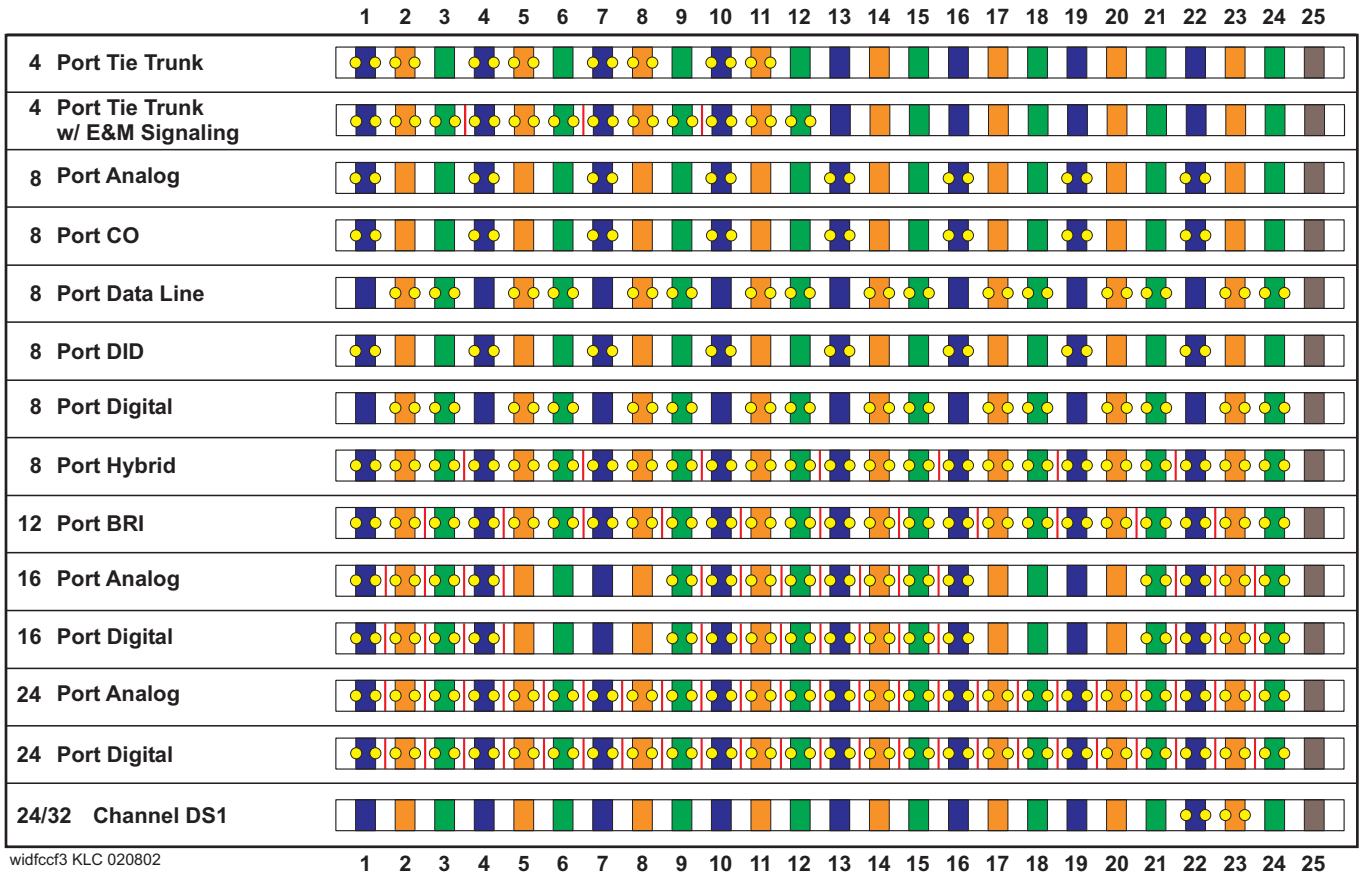
[13] Cross-Connect Jumpers

[14] 103A or Modular Wall Jack

[15] 4-Pair Line Cord

[16] To Line Circuit Pack

Example MDF Connections (MCC1-Multicarrier Cabinet)


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
4 Port Tie Trunk
4 Port Tie Trunk w/ E&M Signaling
8 Port Analog
8 Port CO
8 Port Data Line
8 Port DID
8 Port Digital
8 Port Hybrid
12 Port BRI
16 Port Analog
16 Port Digital
24 Port Analog
24 Port Digital
24/32 Channel DS1
widfccf3 KLC 020802
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

MDF Cross-Connect Fields

Each Main Distribution Frame (MDF) contains a trunk/auxiliary field and a distribution field. The trunk/auxiliary field contains three cross-connect areas:

- *The green field* terminates the network interface leads from the Central Office (CO) and provides the terminals to cross-connect the leads to the purple or yellow fields as required. A single row of the 110-type terminal block can terminate twenty-four 1-pair, eight 3-pair, or twelve 2-pair trunks.
- *The purple field* terminates the trunk circuits from the system with WP-90929, List 1 or 3 concentrator cables. Also, 25-pair cables can be used to terminate trunk circuits from the system with each trunk circuit pack connecting to one 25-pair row of the 110-type terminal block. Each terminal block row can terminate twenty-four 1-pair, eight 3-pair, or twelve 2-pair trunks.
- *The yellow field* provides cross-connect terminals for all miscellaneous leads from the system, such as alarm monitors, emergency transfer relay power, and attendant console power. This field is used for emergency transfer wiring, paging equipment, music sources, and so forth.

The distribution field contains four cross-connect areas:

- *The purple field* (port field) terminates 25-pair cables from the system. Each line circuit pack connects to one 25-pair row of the 110-type terminal block. One 25-pair cable is required for each line circuit pack.

Note:

The 16-port analog line circuit pack requires an adapter cable to connect from one connector on the system to two 25-pair connectors on a terminal block. Two MET circuit packs require a concentrator cable to connect from two connectors on the system to one 25-pair connector on a terminal block.

- *The yellow field* (auxiliary field) terminates all 25-pair cables from the auxiliary cabinet and the Processor Interface. The yellow field is located in the lower right-hand corner of the distribution field.
- *The white field* (station field) terminates the station wiring. The white field indicates 3-pair station circuits (eight circuits per 25-pair cable) routed through a satellite closet.
- *The blue field* (station field) also terminates station wiring. The blue field indicates 3- and/or 4-pair station circuits (eight or six circuits, respectively, per 25-pair cable). The fourth pair, of the 4-pair station circuit provides adjunct power from the cross-connect field on an as-needed basis to terminals within 250 feet (76 m) of the MDF.

Main Distribution Frame

The preferred location of the Main Distribution Frame (MDF) is directly behind the Single-Carrier Cabinet (SCC1) stack or the Multi-Carrier Cabinet MCC1). Typical 110A-Type Terminal Blocks (SCC1) shows a typical SCC1 (Single-Carrier Cabinet) installation using 110A-type terminal blocks, and Typical 110P-Type Terminal Blocks (MCC1) shows a typical Multi-Carrier Cabinet installation using 900-pair 110P-type terminal blocks.

Typical 110A-Type Terminal Blocks (SCC1)

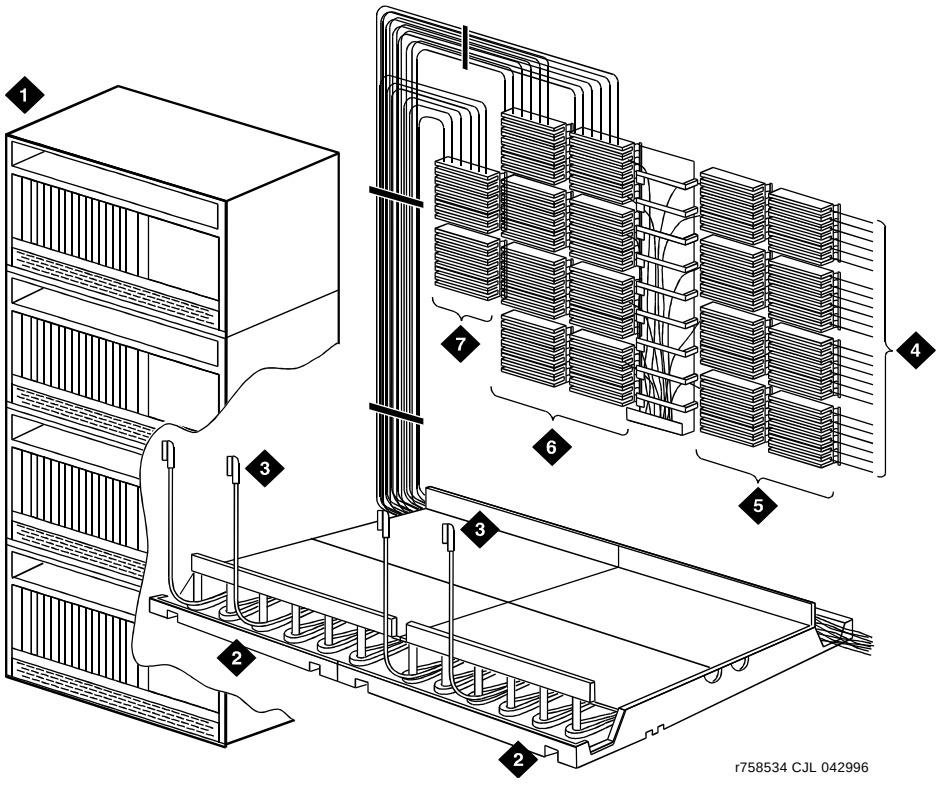


Figure Notes

[1] Single-Carrier Cabinets (Stacked) (SCC1)

[2] Z113A Cable Slack Manager

[3] 25-Pair Cable to System Cabinet

[4] Station Cables

[5] Station Distribution Field

[6] Port Distribution Field

[7] Trunk/Auxiliary Field

Typical 110P-Type Terminal Blocks (MCC1)

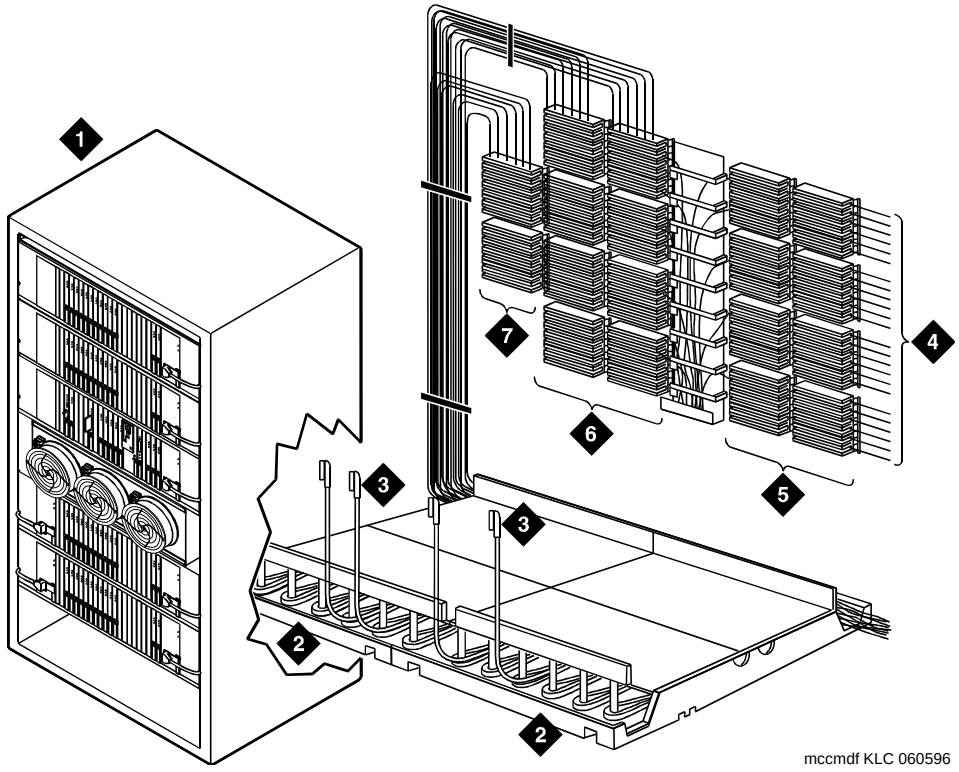


Figure Notes

[1] Multi-Carrier Cabinet (MCC1)

[2] Z113A Cable Slack Manager

[3] 25-Pair Cable to System Cabinet

[4] Station Cables

[5] Station Distribution Field

[6] Port Distribution Field

[7] Trunk/Auxiliary Field

Main Distribution Frame Labels

Label Graphic Symbols and Nomenclature shows the graphic symbols used on labels for the system, cross-connections, information outlets, and cables. The labels are color-coded to identify system wiring:

- Green — To Central Office (CO)
- Purple — To system ports

- Yellow — To auxiliary equipment and miscellaneous system leads
- Blue — To information outlets
- White — From Main Distribution Frame to satellite locations (3-pair)

Each label identifies 2 rows on the terminal block. The upper half identifies the row above it and the lower half identifies the row below it. The labels are inserted into the clear plastic designation strips furnished with the terminal blocks. The strip is snapped in place between the terminal block rows. Label code number 1220A contains all of the required labels.

Label Graphic Symbols and Nomenclature

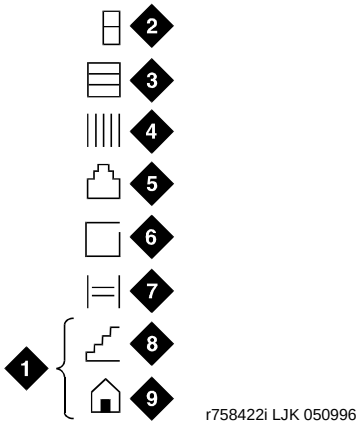


Figure Notes

[1] Write Floor or Building Identification on Label as Required

[2] Cabinet

[3] Carrier

[4] Slot

[5] Information Outlet

[6] Site/Satellite Closet

[7] Tie Circuit

[8] Floor

[9] Building

Off-Premises Circuit Protection

Protection from hazardous voltages and currents is required for all off-premises (out of building) trunks, lines, and terminal installations. Both over-voltage protection (lightning, power induction, and so forth), and sneak current protection are required. Sneak current protectors must be either UL listed/CSA certified, or must comply with local safety standards.

Sneak current protectors must have a maximum rating of 350 mA, and a minimum voltage rating of 600 V, or as required by local regulations. The following devices protect the system from over-voltages:

- Analog trunks use the 507B sneak protector or equivalent. Over-voltage protection is normally provided by the local telephone company.
- Analog voice terminals use one of the following types of combined over-voltage and sneak current protection, or equivalent:

  - Carbon block with heat coil for UL code 4B1C
  - Gas tube with heat coil for UL code 4B1E-W
  - Solid state with heat coil for UL code 4C1S
- DCP and ISDN-BRI terminals use the solid state 4C3S-75 with heat coil protector, or equivalent
- DS1/E1/T1 circuits require isolation from exposed facilities. This isolation may be provided by a CSU (T1), LIU (E1), or other equipment that provides equivalent protection

Sneak Fuse Panels

Sneak current protection is required between the incoming RJ21X or RJ2GX network interface and the system for both trunk and off-premise circuit packs.

The Model 507B sneak current fuse panel, or equivalent, is recommended for sneak current protection. The panel contains two 25-pair connectors, fuse removal tool, and fifty 220029 sneak fuses (and two spares).

Connector cables (B25A male to female) connect the network interface to the sneak fuse panel. Also, 157B connecting blocks equipped with SCP-110 protectors can be used for sneak current protection.

Note:
Sneak current protectors with a rating of 350 mA at 600 volts must be Underwriter's Laboratory (UL) listed for domestic (USA) installation and Canadian Standards Association (CSA) certified for Canadian installation.

- The 507B includes 52 sneak fuses and two cables.
- The SCP-110 protectors are used with 110-type hardware and on the 507B Sneak Fuse Panel. The SCP-110 Protectors can be ordered separately and installed on the 157B connecting block. Fifty protectors are required per block.

Cable Installation

Note:
To route the cables from the rear of the SCC1 stack or MCC1 to the MDF, use the Install Cable Slack Managers procedure. Also see Cable Slack Manager.

This section has information about

- Equipment Room Cabling Labels
- Cable Routing Guidelines
- Control Carrier Outputs Cable Installation
- Connect Control Carrier Outputs Cable
- Trunk Cables Among Network Interface, Sneak Fuse Panel, and Cabinet

And procedures for:

- Label Control Carrier Cable
- Connect Control Carrier Outputs Cable
- Connect Trunk Pairs Using Concentrator Cables
- Connect Trunk Pairs to Cabinet Using Jumper Wires To Establish 3-Pair Modularity
- Install Cables Between Cabinet and MDF

- Install Connector Cables Between Auxiliary Cabinet and MDF

Equipment Room Cabling Labels

The purple port label shown in Equipment Room Cabling Labels is installed on both ends of the 25-pair cables connecting to the trunk/auxiliary field and/or distribution field.

The top blue/yellow building and floor labels are for cables connecting from the equipment room to a site/satellite location on another floor or in another building. The yellow label is for auxiliary circuits connecting to the trunk/auxiliary field. The bottom blue/yellow label is for 25-pair cables connecting to site/satellite closets.

Equipment Room Labels details the label name and range of each label.

Self-Stick Label on 25-Pair Cable Connector shows the proper way to install a label on a 25-pair cable connector. Install the label near the rear of the connector so it is not obscured by the cabinet connector retainers. It can also be installed on the skin of the cable near the connector.

Cable Routing Guidelines

Cable Routing to Top Terminal Blocks and Cable Routing to Bottom Terminal Blocks show typical cable routing from the cabinet to the top and bottom of the MDF, respectively.

Use these guidelines when routing cables from the cabinet to the MDF. Following these guidelines will maximize use of the cable slack managers and make future cabling additions and changes easier.

- Connect each port cable at the cabinet, and then route it along the front trough of the cable slack manager to the connecting/terminal block, where the cable is terminated.
- Leave enough slack at the cabinet end of the cable to allow for proper dressing of the cables.
- Route the cable from the cabinet to the wall. Place the cable beside 1 of the rows of columns in the cable slack manager.

Note:
Retainers mounted on the columns keep the cable from protruding above the top of the base of the cable slack manager.

- Determine the length of the cable required to reach from the cable slack manager to the assigned connecting/terminal block.
- Use D rings on the wall to support the cable. (The cable must be supported.)
- Coil the cable around the columns in the cable slack manager to store cable slack. The first run should always go across the full length of the 5 columns in the cable slack manager.
- Connect the cable to the assigned connecting/terminal block.
- Avoid placing copper cables where they may bend or strain fiber optic cables.

Control Carrier Outputs Cable Installation

A connector on the rear of the Control Carrier is labeled **AUX**. A 25-pair cable connects the **AUX** connector to a 110-type terminal block in the yellow field of the trunk/auxiliary field. The **AUX** connector outputs include the following:

- Alarm monitoring for the processor interface

- 7 DC power (-48 VDC) sources for emergency transfer units
- 3 DC power (-48 VDC) sources for remotely powering a total of 3 attendant consoles or executive voice terminal adjuncts
- The remote maintenance internal modem connection location
- Access to a relay contact is available to actuate a light, bell, or similar type customer-supplied device. The relay can be administered to make contact when a major, minor, or warning alarm condition occurs in the system

Trunk Cables Among Network Interface, Sneak Fuse Panel, and Cabinet

The 1-pair of Central Office (CO) trunks are installed by the network provider in the green field. Up to 24 pairs may be terminated on each row of the 110-type terminal block. Tie trunks also appear in the green field with up to eight 3-pair trunks terminated on each row of the 110-type terminal block.

WP-90929, List 1 and 3 concentrator cables can be used to connect the cabinet to the 110-type terminal blocks in the purple field. The 1-pair patch cords/jumper wires are then run from the purple terminal block rows to the green terminal block rows in order to establish the correct 3-pair modularity.

Equipment Room Cabling Labels

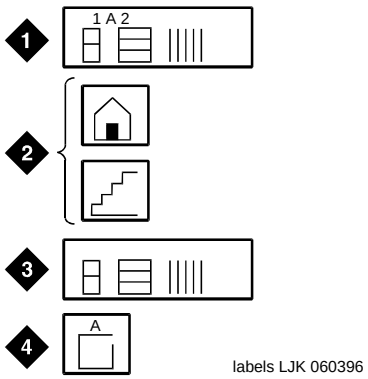


Figure Notes:

[1] Purple Label (Port Cable)

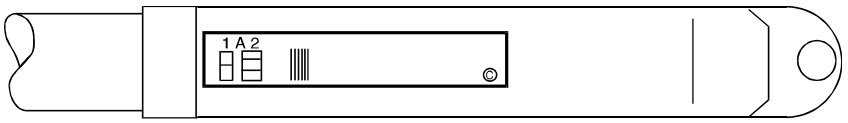
[2] Blue/Yellow Label (Building and Floor)

[3] Yellow Label (Auxiliary)

[4] Blue/Yellow Label (Site or Satellite)

Equipment Room Labels	
Label Name	**Range**
Port Cable	1A1-1A20, 1B1-1B20, 1C1-1C20, 1D1-1D20, 1E1-1E20
Building	Field Identified
Floor	Field Identified
Auxiliary Cable	Field Identified
Site or Satellite	A-F and/or Field Identified

Self-Stick Label on 25-Pair Cable Connector



Cable Routing to Top Terminal Blocks

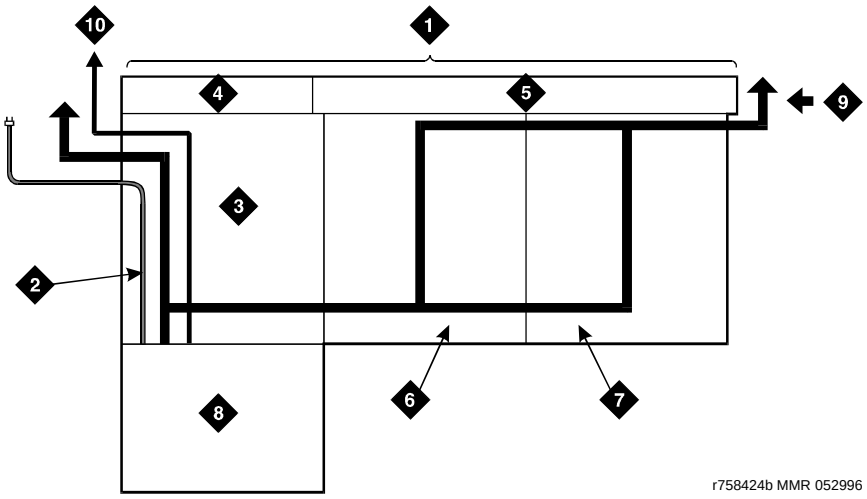


Figure Notes:

[1] Main Distribution Frame

[2] AC Power Cord (AC-Powered Cabinets Only)

[3] Cable Slack Manager Number 1

[4] Trunk/Auxiliary Field

[5] Station Distribution Field

[6] Cable Slack Manager Number 2

[7] Cable Slack Manager Number 3

[8] System Cabinet(s)

[9] To Building Cables

[10]10 AWG (#25) (6 mm^2) Wire to Coupled Bonding Conductor

Cable Routing to Bottom Terminal Blocks

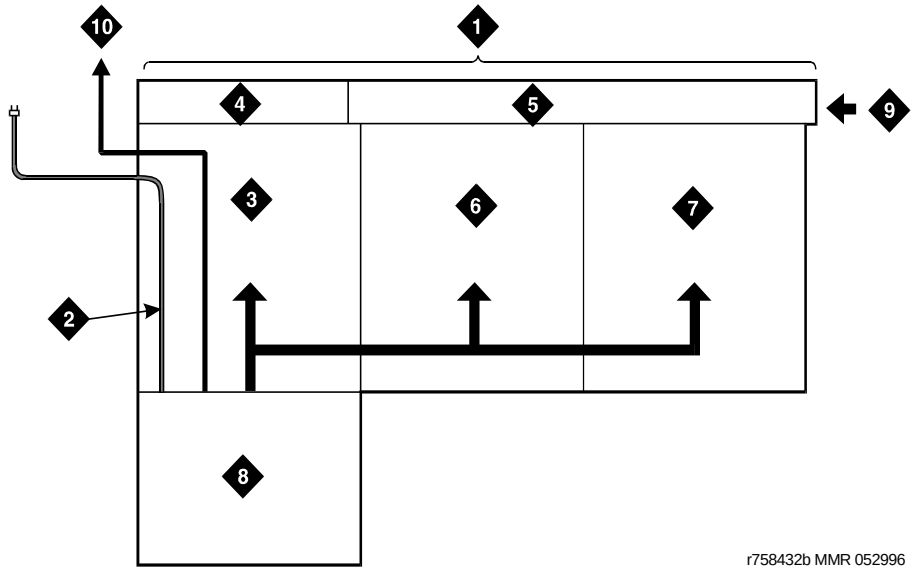


Figure Notes:

[1] Main Distribution Frame

[2] AC Power Cord (AC-Powered Cabinets Only)

[3] Cable Slack Manager Number 1

[4] Trunk/Auxiliary Field

[5] Station Distribution Field

[6] Cable Slack Manager Number 2

[7] Cable Slack Manager Number 3

[8] System Cabinet(s)

[9] Building Cables (Through Cable Trough)

[10]10 AWG (#25) (6 mm^2) Wire to Coupled Bonding Conductor

Coupled Bonding Conductor

The Coupled Bonding Conductor (CBC) connects to the single-point ground block and runs adjacent to pairs in an associated telecommunications cable. The mutual coupling between the bonding conductor and the pairs reduces potential differences in terminating equipment.

The conductor consists of a 10 AWG (#25) (2.5 mm^2) wire tie-wrapped to the inside wiring cable and terminated at the CBC terminal bar at the Main Distribution Frame (MDF). A minimum of 12 inches (30.48 cm) spacing must be maintained between the CBC and other power and ground leads.

The 10 AWG (#25) (2.5 mm^2) wire must be long enough to reach the telecommunications cables at the rear of the system cabinets, follow these cables to the MDF, and to terminate at the CBC.

Installation Space Requirements

This section has information about

Sneak Fuse Panels and Emergency Transfer Units

110-Type Hardware

Cable Slack Manager

Sneak Fuse Panels and Emergency Transfer Units

Approximately eight inches (20 cm) of horizontal wall space is required for each column of sneak fuse panels. Horizontal wall space must also be provided for emergency transfer units.

110-Type Hardware

The trunk/auxiliary field and the distribution field are mounted on the same wall. Each 110P-type terminal block is 8.5 inches (21.6 cm) wide. Vertical patch cord troughs are 5.31 inches (13.4 cm) wide and horizontal patch cord troughs are 23 inches (58.4 cm) wide.

Each 110A-type terminal block is 10.81 inches (27.4 cm) wide; however, no horizontal patch cord troughs are used and the blocks are shorter than 110P-type terminal blocks. This allows the 110A-type terminal blocks to be stacked. Therefore, the 110A-type hardware requires less space than the 110P-type hardware on a per-station basis.

Cable Slack Manager

A Cable Slack Manager is 32 inches (81.3 cm) wide. Slack managers are commonly used in installations consisting of cabinet stacks. The quantity of slack managers is determined by dividing the total length of the Main Distribution Frame (MDF) in inches (cm) by 32 (81.3). A partial number of 0.4 or less should be rounded down, and a partial number of 0.5 or more should be rounded up (for example: 2.4 = 2 Cable Slack Managers and 2.5 = 3 Cable Slack Managers).

Note:
Cable clamps are required in installations with Cable Slack Managers. At the rear of the cabinets, on each rear ground plate, install two cable clamps using the screws provided. These clamps hold the 25-pair input/output or Main Distribution Frame (MDF) cables in place.

Station Wiring Design

The following hardware and cabling is used:

- Information Outlets (modular wall jacks)
- Station Cables
- Closets
  - ~ Site locations
  - ~ Satellite locations

A brief description of each of the above listed items follows. Ordering information is not provided for station cables and information outlets.

Information Outlets

Information outlets are 8-pin modular wall jacks. Most of the outlets are wired with push-on connections. Information outlets are also available that connect to a double

modular plug-ended 4-pair station cable routed from the MDF, a site/satellite location, or an adapter.

Station Cables

For clarity, a station cable is either a 25-pair cable, multiple 25-pair cable, or 4-pair D-inside wire (DIW) run from the equipment room, site/satellite location, or adapter to the information outlets. The following station cables are available. See Example of Extending 4-Pair Station Cables.

25-pair station cable — Use between the equipment room and site/ satellite locations or adapters. Use an A25D cable (male to male) between the equipment room and satellite closet. Use a B25A cable between the equipment room and site closet or adapter.

Multiple 25-pair station cable — Use between the equipment room and site/satellite locations or adapters. This cable consists of individually sheathed 25-pair cables with a factory-installed 25-pair connector on each end. Use a male to female cable to connect between the equipment room and site location or adapter. Use a male to male cable to connect between the equipment room and satellite location. Staggered-finger cables are recommended for all multiple 25-pair station cables and are available in both double-ended and single-ended types.

Single modular plug-ended 4-pair station cable — Use this cable between adapters and information outlets that require push-on connections. It can also be used when 4-pair station cables are field- terminated on the 110-type terminal blocks in the equipment room or satellite closet and modularly connected to information outlets. The station cables are available in the following lengths:

- 10 ft (3.05 m)
- 25 ft (7.62 m)
- 50 ft (15.24 m)
- 75 ft (22.86 m)
- 100 ft (30.5 m)
- 150 ft (45.72 m)
- 200 ft (61 m)

Note:
If more than 200 ft (61 m) of 4-pair station cable is required, a 451A in-line adapter (double-ended modular female connector) is attached to the cable and a second 4-pair cable of the required length is plugged into the adapter. See Example of Extending 4-Pair Station Cables.

Double modular plug-ended 4-pair station cable — Use this cable to provide nonstandard length runs between adapters and information outlets with push-on connections. It can also be used between adapters and modularly connected information outlets. It is available in the same lengths as the single modular plug-ended cable.

Bulk Cable — Same as the 25-pair cable or multiple 25-pair cable; however, the bulk cable is not equipped with connectors. Use this cable between the equipment room and satellite closets when both are equipped with punch-down type terminal/connecting blocks.

4-pair station cable — Use this cable when 4-pair station cables are to be field-terminated on the 110-type terminal blocks in the equipment room or satellite closet and the information outlets require push-on connections

Closets

Site Locations

Site locations are closets that provide a point in the station wiring for the administration of remote powering. Adapters are used at site locations to terminate the 25-pair station cables and provide connection points (modular jacks) for power adapters and 4-pair station cables.

The258A and BR2580A adapters plug into a 25-pair female cable connector. These adapters divide the 25-pair cable into six 4-pair (modular jack) circuits. See 258A and BR2580A Adapters.

The 356A adapter plugs into a 25-pair female cable connector. See 356A Adapter. The 356A adapter divides the 25-pair cable into eight 3-pair circuits. Although the circuits are 3-pair, the adapters modular jacks will accept the 8-wide modular plug used on the 4-pair station cable.

CAUTION:
Adapters wired similarly to the 356A should not be used. Their jacks do not accept 4-pair plugs.

Use theZD8AJ adapter to connect a Multi-button Electronic Telephone (MET) line cord to an information outlet. The adapter interchanges pairs 3 and 4 to correspond with the pair assignments for the telephone. The line cord plugs into the adapter, and then the adapter plugs into an information outlet.

Satellite Locations

Satellite locations are closets that provide an administration point (using cross-connect equipment) for station cables and where adjunct power may be applied. The station cable circuits from the equipment room MDF are 3-pair. At the satellite location, 4-pair circuits run to the information outlets. The hardware used is 110-type terminal blocks.

Satellite Locations Using 110-Type Hardware

Each terminal block has a 3-pair (white field) and a 4-pair (blue field) located on the same terminal block.

The 110A-type terminal block that can be used is the 110AE1-75FT. It must be field-terminated to both the white and blue fields.

The 300-pair 110P-type terminal blocks that can be used are:

- 110PE1-300CT/FT — 25-pair connector on the white field and field-terminated on the blue field
- 110PE1-300FT — Field-terminated on both the white and blue fields

The 900-pair 110P-type terminal blocks that can be used are:

- 110PE1-900CT/FT — 25-pair connector on the white field and field-terminated on the blue field
- 110PE1-900FT — Field-terminated on both the white and blue fields

Example of Extending 4-Pair Station Cables

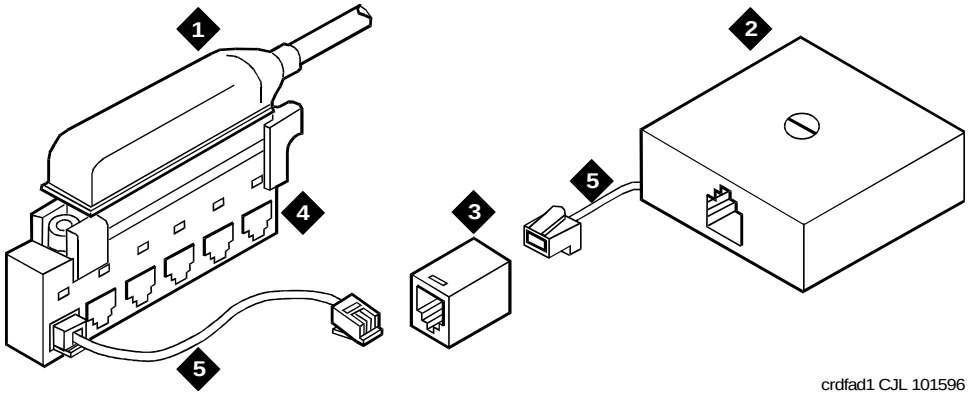


Figure Notes:

[1] Station Cable

[2] Information Outlet

[3] 451A In-Line Adapter

[4] 258A Adapter

[5] 4-Pair Station Cable

258A and BR2580A Adapters

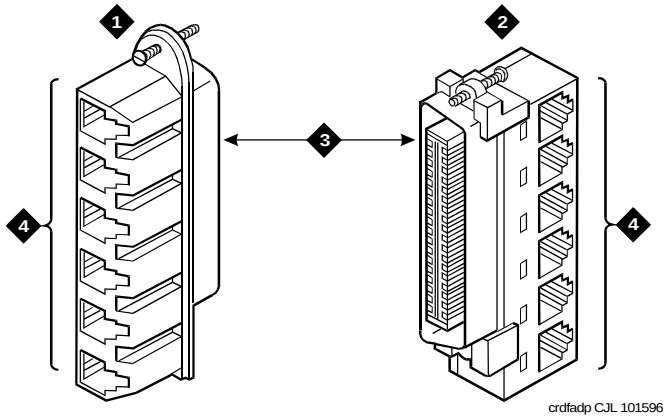


Figure Notes:

[1] BR2580A Adapter

[2] 258A Adapter

[3] 25-Pair Male Ribbon Connector

[4] 4-Pair Modular Jacks (8 Pins)

356A Adapter

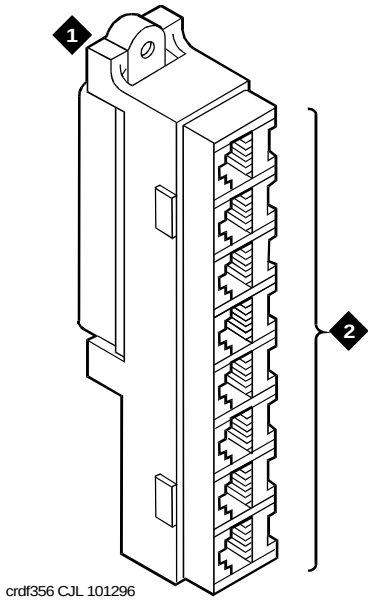


Figure Notes:

[1] 356A Adapter

[2] 4-Pair Modular Jacks (6 pins each, connected to 25-pair ribbon connector)

Station Circuit Distribution from Equipment Room

This section explains the station circuit distribution from the equipment room to the information outlets for new wiring installations. Example connection diagrams are provided to show the options for running and connecting the station cables.

If most of the telephones/voice terminals that require remote powering are within 250 ft (76.2 m) of the equipment room, 4-pair station circuits are run from the equipment room to the information outlets. If this is not the case, or if the customer requires 2-point administration, 3-pair station circuits are run from the equipment room to satellite locations. Then, the 4-pair station circuits are run from the satellite locations to the information outlets.

This section has information about

- 4-Pair Station Circuits
- 3-Pair to 4-Pair Station Circuit Distribution

Lists of terminals that can be connected to the system are provided in

- Voice and Data Terminals
- Connectable Administration Terminals

4-Pair Station Circuits

Four-pair circuits can be run directly from an equipment room MDF to a 258A or BR2580A adapter as shown in 4-Pair Circuit Distribution and Connectivity. The 4-pair station cables connect the adapter to the information outlets.

The 4-pair station cables can be run directly from the equipment room to the information outlets if 4-pair terminal blocks are used in the distribution field. See 4-Pair

Run to Equipment Room or Satellite Location. The station cables must be field-terminated on the 110-type terminal blocks.

If 110-type terminal blocks are used with a modular plug-ended station cable, an adapter can be connected directly to the 110-type terminal block connectors. See 4-Pair Run to Equipment Room or Satellite Location.

3-Pair to 4-Pair Station Circuit Distribution

3-Pair to 4-Pair Satellite Location Connectivity shows the 3-pair circuit distribution from an equipment room MDF to a satellite location using 110-type hardware. Four-pair circuits are distributed from the satellite location to the information outlets.

Three-pair circuits can also be run directly from the equipment room MDF to a 356A adapter as shown in 3-Pair to 4-Pair Circuit Distribution and Connectivity. Four-pair station cables connect the adapter to the information outlets. Four-pair station cables can be run directly from a satellite location to the information outlets as previously described.

Note:

Bridged taps are not allowed on any part of the station wiring.

4-Pair Circuit Distribution and Connectivity

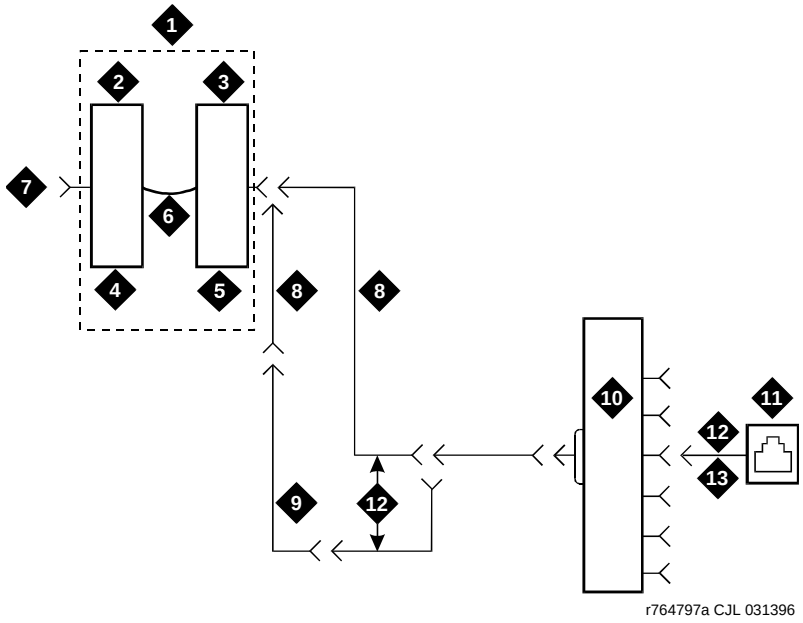


Figure Notes:

[1] Part of Main Distribution Frame (MDF)

[2] 3-Pair Connecting Blocks

[3] 4-Pair Connecting Blocks

[4] Purple Field

[5] Blue Field

[6] Patch Cord or Cross-Connect Jumpers

[7] To System Cabinet (Three-Pair Modularity)

[8] B25A Cable

[9] Connectorized (Staggered Finger) Multiple 25-Pair Cable

[10]258A or BR2580A Adapter

[11]Information Outlet

[12]4-Pair Circuit

[13]DIW Station Cable (D-Inside Wire)

4-Pair Run to Equipment Room or Satellite Location

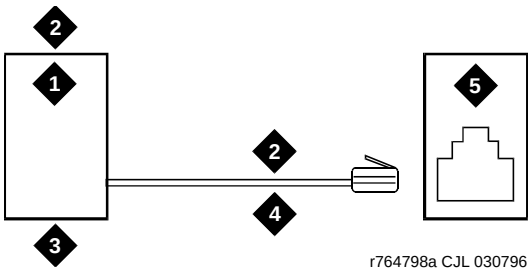


Figure Notes:

[1] Station Side of MDF or Satellite Location

[2] 4-Pair Circuit

[3] Blue Field

[4] DIW Station Cable (D-Inside Wire)

[5] Information Outlet

4-Pair Run to Equipment Room or Satellite Location

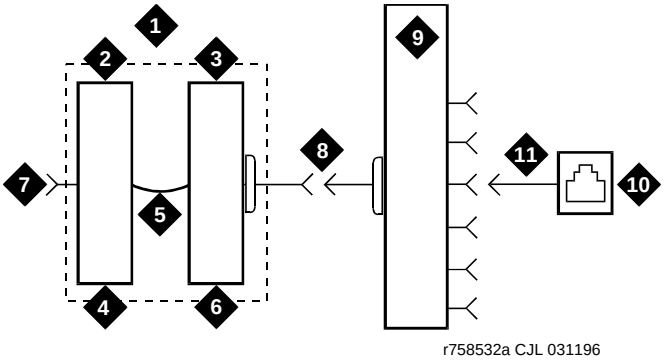


Figure Notes:

[1] Part of MDF

[2] 3-Pair Connecting Blocks

[3] 4-Pair Connecting Blocks

[4] Purple Field

[5] Patch Cord or Cross-Connect Jumpers

[6] Blue Field

[7] To System Cabinet (3 pair modularity)

[8] A25D Cable

[9] 258A or BR2580A Adapter

[10]Information Outlet

[11]4-Pair Circuit (DIW station cable (D-Inside Wire))

3-Pair to 4-Pair Satellite Location Connectivity

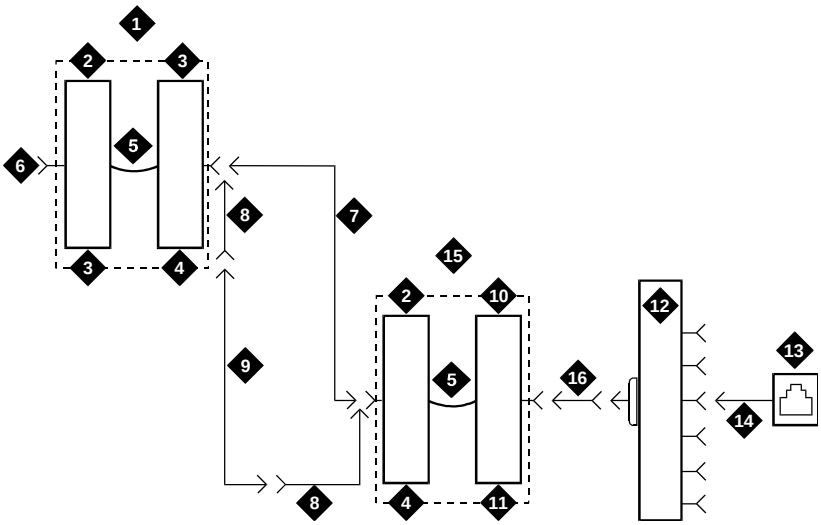


Figure Notes:

[1] Part of MDF

[2] 3-Pair Connecting Blocks

[3] Purple Field

[4] White Field

[5] Patch Cord or Cross-Connect Jumpers

[6] To System Cabinet (3 Pair Modularity)

[7] A25D Cable (3-Pair Circuits)

[8] B25A Cable

[9] Connectorized (staggered finger) Multiple 25-Pair Cable

[10]4-Pair Connecting Blocks

[11]Blue Field

[12]258A or BR2580A Adapter

[13]Information Outlet

[14]4-Pair Circuit [DIW Station Cable (D-Inside Wire)]

[15]Part of Satellite Location

[16]4-Pair Circuits (B25A Cable)

3-Pair to 4-Pair Circuit Distribution and Connectivity

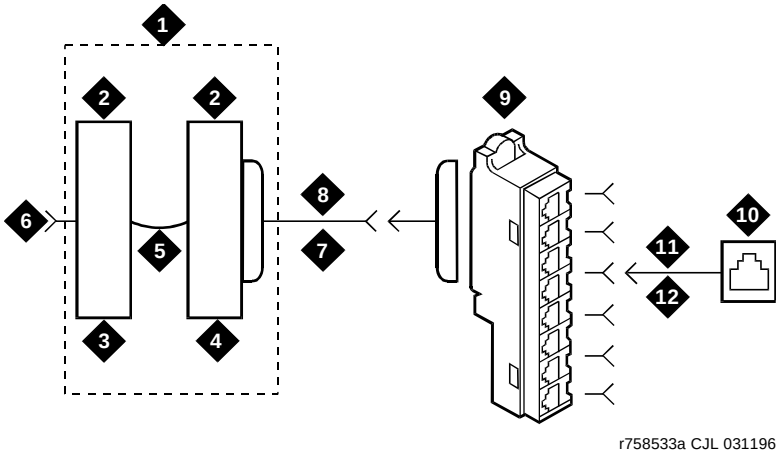


Figure Notes:

[1] Part of Main Distribution Frame (MDF)

[2] 3-Pair Connecting Blocks

[3] Purple Field

[4] Blue Field

[5] Patch Cord or Cross-Connect Jumpers

[6] To System Cabinet (3-Pair Modularity)

[7] B25A Cable

[8] 3-Pair Circuits

[9] 356A Adapter

[10]Information Outlet

[11]3-Pair Circuit in 4-Pair Wire

[12]DIW Station Cable (D-Inside Wire)

Voice and Data Terminals

These voice and data terminals can connect to the system.

Voice and Data Terminals	Type
Multi-button Electronic Telephone (MET) sets: 10, 20, 30 Button	Voice
Analog: 500, 2500/2554, 2500 DMGC, 2500YMGK, S203A Speakerphone	Analog voice
71XXX series: 7101A, 7102A, 7103A, 7104A	Analog voice
73XXX series: 7302H, 7303H, 7303S, 7305S, 7305H	Hybrid voice
74XXD series: 7401D, 7403D, 7404D, 7405D, 7406D, 7407D, 7410D, 7434D, 7444	Digital voice

81XX series: 8102, 8110 91XX series: 9101, 9103, 9110	Analog voice
84XX series: 8403B, 8405B/D/B+/D+, 8410B/D, 8411B/D, 8412, 8434, 8435 94XX series: 9403, 9410, 9434	Digital voice
Basic Rate Interface (BRI) (75XX series): 7505-VOM/T, 7506-VOM/T, 7507-VOM/T 85XX series: 8503, 8510, 8520	BRI voice
Workstation series Business Communications Terminals (BCTs) and Business Communications Systems (BCS): PC/PBX platform (digital): PC/ISDN platform (BRI)	Data
Consoles: 301A Attendant Console, 302A1 Enhanced Generic 1 Console 602A1 ACD Console (CallMaster® digital communications terminal)	Data and voice
ZE01A Expansion Module for 8434Dx	Voice and Features
Cordless Hybrid: MDW 9000 (TransTalk 9000) MDC 9000	Voice
DCP Data interface: Constellation Automatic Call Distribution (ACD) data terminal	Data and voice
PassageWay interface: Consoles: 302B1, 302C1 Attendant Console 603A/D Automatic Call Distribution (ACD) Console (CallMaster digital console) 603E Automatic Call Distribution (ACD) Console (CallMaster digital console)	Data and voice

Connectable Administration Terminals

These administration terminals can connect to the system.

Administration Terminal	Application
715 BCS and 715 BCS-2 Management Terminal	Management Terminal system administration and maintenance terminal

*The keyboards and terminals are interchangeable when an adapter cable is used.

Note:
The older version of 715 BCT (the 715 Business Communications System (BCS)) (406803148 and 406803155), has a 6-pin mini-DIN keyboard connector.

The new version of 715 BCT (the 715 Business Communications System (BCS)) (4073113881 and 407313899), has a 6-pin RJ-11 keyboard jack located on the side of the terminal

Layout

This section has information about

- Information Outlet Locations
- Site, Satellite, and Adapter Locations
- Sizing 4-Pair Station Cables
- Sizing 25-Pair and Multiple 25-Pair Station Cables
- 3-Pair Station Cable Circuits
- 4-Pair Station Cable Circuits

Information Outlet Locations

The customer or marketing representative must provide floor plans showing the information outlet locations and types (flush- or surface-mounted) required. The floor plans must also show a complete overview of all conduit and cabling facilities in the building.

Site, Satellite, and Adapter Locations

Use the following information when determining site, satellite, or adapter locations.

- Keep the number of locations to a minimum.
- To minimize the station wiring distances, centrally locate the sites/satellites, or adapters among the information outlets.
- Site/satellite locations must be easily accessible and contain AC-powered receptacles.

One 258A/BR2580A adapter is required for each 25-pair station cable containing 4-pair station circuits. One 356A adapter is required for each 25-pair station cable containing 3-pair station circuits. Hardware requirements are the same as for the equipment room.

Sizing 4-Pair Station Cables

Use the scale of the floor plan to determine the approximate length of the station cables required per the standard SYSTIMAX wiring concepts.

Sizing 25-Pair and Multiple 25-Pair Station Cables

Use the scale of the floor plan to determine the approximate length of each 25-pair station cable. The cables must be selected and properly sized to make maximum use of the hardware at the equipment room or satellite location.

Use 25-pair B25A cables to connect adapters directly to the MDF or satellite location. Staggered-finger cables, equipped with factory-installed 25-pair connectors at both ends, should be used when multiple 25-pair cables are used between the equipment room or satellite location and the adapters. B25A cables are required at the equipment room or satellite location to connect the staggered-finger cables to the 110-type terminal blocks.

Use the following information to determine the cable size (cable pairs) required for either 3-pair or 4-pair circuits. Note the length and size on the floor plan to aid in the ordering and installation of the station cables.

3-Pair Station Cable Circuits

To determine the size of station cables containing 3-pair circuits, multiply the number of 3-pair circuits required at the satellite location by 3.5. Then, using the minimum size cable requirement, round up the cable size requirement to the next highest available cable bundle size. This will provide additional pairs for growth and compensate for every twenty-fifth pair in a cable that is not used.

4-Pair Station Cable Circuits

To determine the size of station cables containing 4-pair circuits, find out how many information outlets are served by the equipment room MDF or satellite location MDF. Multiply the number of information outlets by 4. Then, using the minimum size cable requirement, round up the cable size requirement to the next highest available cable bundle size.

Note:
This formula may not compensate for the unused twenty-fifth pair in all cases. If not, it must be allowed for.

Patch Cord/Jumper Installation and Administration

Before starting the patch cord installation, obtain a copy of the Port Assignment Record forms from the customer or marketing representative. See Port Assignment Record Form. These forms contain the port assignments and identify the extension numbers (**Terminal No.**) of the telephones/voice terminals. Enter the jack assignments at the equipment room and indicate if adjunct power is required and where it is provided (MDF, site/satellite closet, or information outlet).

When satellite locations are provided, enter the satellite letter designation (A through F) and the jack appearance in the equipment room on the form. Also, enter the floor designation and/or building designation if appropriate. For 1-point administration, this entry is all that is required.

The white label identifying the terminal block row associated with circuits 17 to 24 connects to an identically labeled terminal block row at the satellite closet. See Example 3-Pair Labeling to Information Outlet. This is always the case for either 1-point or 2-point administration.

The satellite symbol must be installed at all connection points between the blue field and the information outlet. It must also be installed at the information outlet itself.

Example 4-Pair Labeling to Information Outlet shows an example labeling scheme for 4-pair circuits from the equipment room to the information outlets. The labeling scheme for 3-pair circuits from the MDF to a satellite location.

Port Assignment Record Form

CARRIER _____ PORT ASSIGNMENT RECORD Page _____

Slot	Port	Jack*	Extension Number Old	Extension Number New	Bldg Flr Rm	Voice Terminal Type	Voice Terminal Color	Voice Terminal Adjunct	Module	Power*		User Name/Use
	01											
	02											
	03											
	04											
	05											
	06											
	07											
	08											
	09											
	10											
	11											
___ Slot	12											
	13											
	14											
_____ CKT PK Type	15											
	16											
	17											
	18											
	19											
	20											
	21											
	22											
	23											
	24											

* To be completed by installation technician

r764787 PDH 071596

Example 3-Pair Labeling to Information Outlet

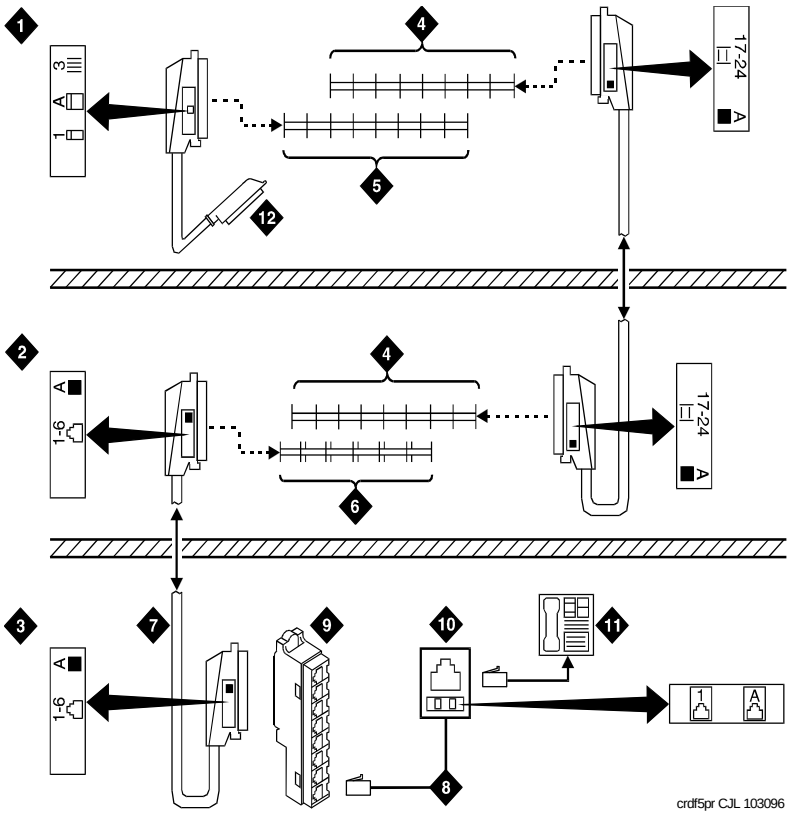


Figure Notes:

[1] Equipment Room

[2] Satellite Location

[3] Work Location

[4] White Row on 110 Terminal Block

[5] Purple Row on 110 Terminal Block

[6] Blue Row on 110 Terminal Block

[7] Central Location for Terminals 1 through 6

[8] D-Inside Wire Cut Down to Connecting Block

[9] 258A Adapter

[10] Information Outlet

[11] Voice Terminal

[12] To Port Connector on Cabinet (Cabinet 1, Carrier A, Slot 03)

Example 4-Pair Labeling to Information Outlet

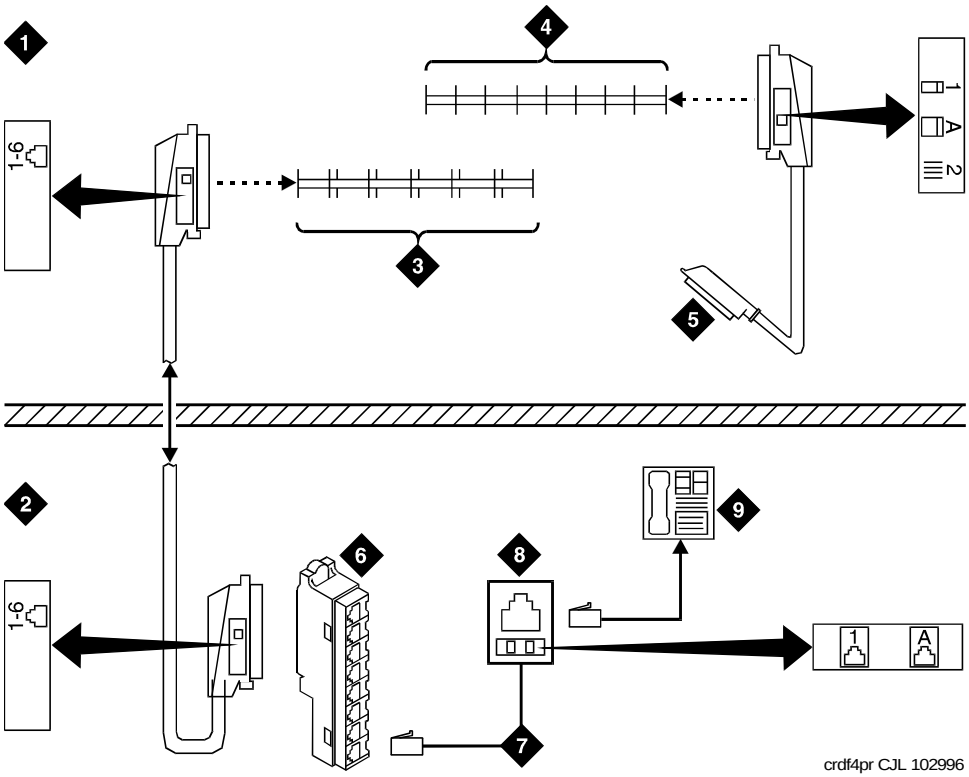


Figure Notes:

[1] Equipment Room

[2] To Central Location for Terminals 1 through 6

[3] Blue Row on 110 Terminal Block

[4] Purple Row on 110 Terminal Block

[5] To Port Connector on Cabinet (Cabinet 1, Carrier A, Slot 03)

[6] 258A Adapter

[7] D-Inside Wire Cut Down to Connecting Block

[8] Information Outlet

[9] Voice Terminal

Label Control Carrier Cable

Begin

Return to Task List

1. Place the appropriate **AUX** connector label on the assigned 110-type terminal block row.
2. On the control carrier cable, place a yellow auxiliary label on the connectors at each end of the cable.
3. Write “AUX” on each label.

Connect Control Carrier Outputs Cable

Begin

Return to Task List

1. Plug the connector cable in the **AUX** connector on the rear of the Control Carrier.
2. Route the connector cable through the cable slack manager to the assigned 110-type terminal block in the yellow field of the trunk/auxiliary field.

Connect Trunk Pairs Using Concentrator Cables

Begin

Return to Task List

Connect Trunk Pairs Using Concentrator Cables shows trunk pairs connected to the cabinet with concentrator cables. To install the cables:

1. Connect B25A cables between the network interface and sneak fuse panels.
2. Connect A25D cables from the sneak fuse panels to the 110-type terminal block connectors in the green field.
3. Connect patch cords/jumper wires from the terminal block in the green field to the associated terminal block in the purple field.
4. Connect the single-fingered end of the concentrator cables to the 110-type terminal block connectors in the purple field in Step 3.
5. Connect the other end (2/3-fingered end) of the concentrator cables to the appropriate carrier slots. Equipped carrier slots are identified on the CSD. Mark the nomenclature strips above the carriers to identify the slots.
6. Label connectors on each end of the cables that connect to the cabinet.
7. Route the cables down the sides of the cabinet and store the excess cable slack in the cable slack manager as previously described.

Connect Trunk Pairs Using Concentrator Cables

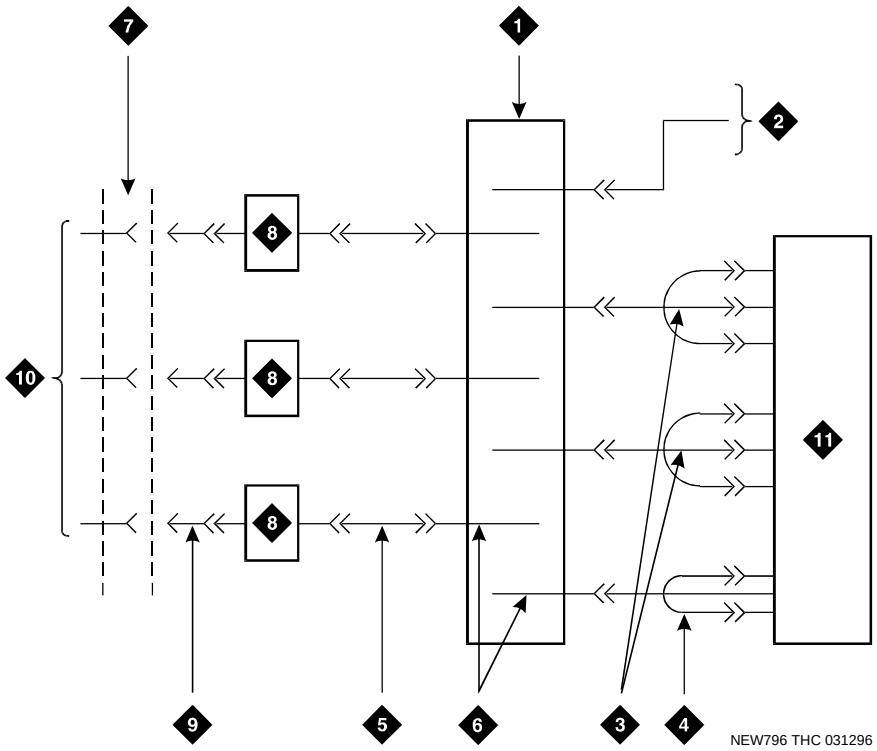


Figure Notes:

[1] Trunk/Auxiliary Field

[2] To Control Carrier AUX Connector

[3] Concentrator Cable (WP90929, List 1)

[4] Concentrator Cable (WP90929, List 3)

[5] A25D (Male-to-Male) Cable

[6] Alternate Block/Rows

[7] RJ21X/RJ2GX Network Interface

[8] Sneak Fuse Panel

[9] B25A Cable

[10]Central Office Trunks

[11]System Cabinet

Return to Task List

Connect Trunk Pairs to Cabinet Using Jumper Wires To Establish 3-Pair Modularity

Begin

Return to Task List

3-Pair Modularity for Trunk Pairs for 1-Pair Trunks and 3-Pair Modularity for Trunk Pairs for 3-Pair Tie Trunks show trunk pairs connected to the cabinet with jumper wires to establish 3-pair modularity.

To connect the trunk pairs to the purple field:

1. Connect B25A cables between the network interface and the sneak fuse panels. See 3-Pair Modularity for Trunk Pairs for 1-Pair Trunks.
2. Connect A25D/B25A cables from the sneak fuse panels to the 110-type terminal block-type connecting block connectors in the green field.
3. Connect 1-pair patch cords/jumper wires from each 110-type terminal block row in the green field to the 110-type terminal block rows in the purple field for 1-pair Central Office (CO) trunks or in 3-Pair Modularity for Trunk Pairs for 3-Pair Tie Trunks for 3-pair tie trunks.

3-Pair Modularity for Trunk Pairs for 1-Pair Trunks

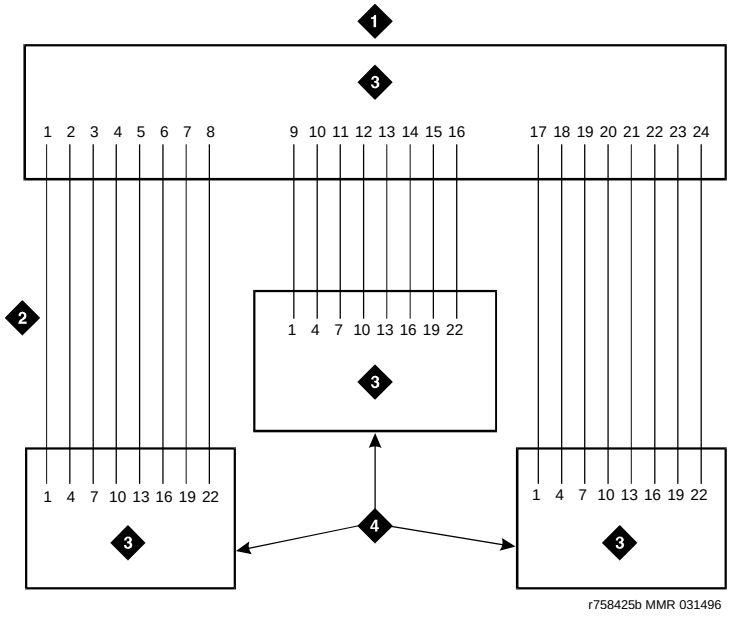


Figure Notes:

[1] Green Field

[2] 1-Pair Jumpers

[3] Pairs

[4] Purple Field

3-Pair Modularity for Trunk Pairs for 3-Pair Tie Trunks

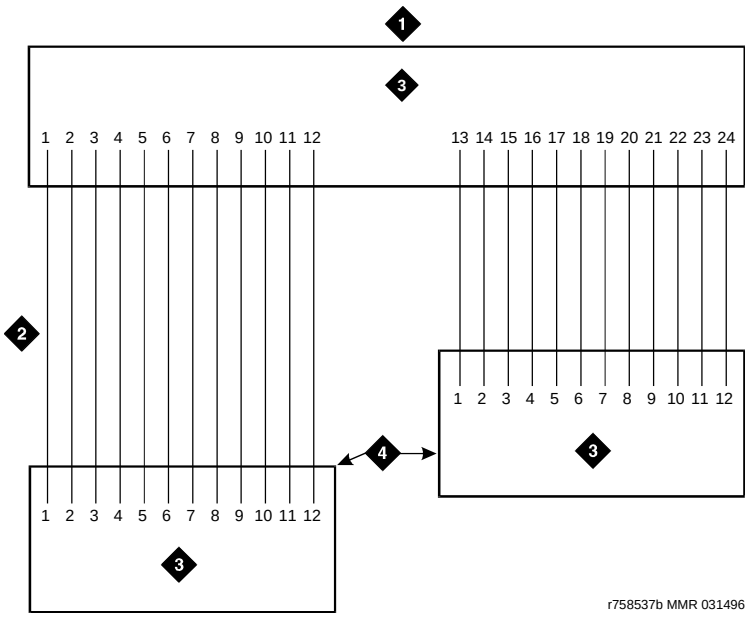


Figure Notes:

[1] Green Field

[2] 1-Pair Jumpers

[3] Pairs

[4] Purple Field

Return to Task List

Install Cables Between Cabinet and MDF

Begin

Return to Task List

1. Install D rings on the wall between the cable slack manager and the terminal/connecting blocks mounted on the MDF.
2. Install a self-adhesive port label on the back of each connector on the connector cable. Position the labels so the cabinet connector retainers do not cover them.
3. At the rear of the cabinet, connect 1 end of the connector cable to the assigned connector.
4. Route the cable down the rear of the cabinet, through the cable slack manager, and to the MDF.
5. At the MDF, connect the other end of the cable to the assigned terminal/connecting block connector.
6. Store the cable slack in the cable slack manager.
7. Repeat Steps 2 through 6 until all cables are installed.

Return to Task List

Install Connector Cables Between Auxiliary Cabinet and MDF

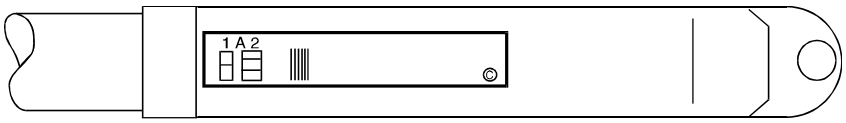
Begin

Return to Task List

Auxiliary equipment that connects to the MDF can be mounted inside the Auxiliary cabinet. The equipment connects to an ED-1E1443-10 (Group 1) intraconnection panel mounted in the cabinet. This intraconnection panel consists of a 110-type 100-pair wiring block. Auxiliary equipment is connected to the 110-type wiring block. The wiring block is pre-wired to four 25-pair female connectors mounted on the outside rear of the cabinet.

1. Install “D” rings on the wall between the cable slack manager and the terminal/connecting blocks mounted on the MDF.
2. Install a self-sticking port label on the rear of each connector on the B25A connector cable. See Self-Stick Label on 25-Pair Cable Connector.
3. Labels should be positioned so they will not be obscured by the cabinet connector retainers.
4. At the rear of the Auxiliary cabinet, connect 1 end of the connector cable to the assigned connector.
5. Route the cable down the rear of the cabinet and through the cable slack manager to the MDF.
6. At the MDF, connect the other end of the cable to the assigned terminal/connecting block connector.
7. Store the excess cable in the cable slack manager.
8. Repeat Steps 2 through 6 until all cables are installed.

Self-Stick Label on 25-Pair Cable Connector



lbdf25p LJK 101596

Return to Task List

Mount 110A- or 110P-type terminal blocks on the wall

Begin

Return to Task List

The 110A-type terminal blocks can be stacked in almost any arrangement at any height or location on the wall. One arrangement is shown in 110A-Type Terminal Blocks (300-Pair). The distance between the mounting screw holes on the terminal blocks is 10.8 in. (27.4 cm). If a vertical patch cord trough is used, the distance between the mounting screw holes is 5.31 in. (13.3 cm).

With 110P-type terminal blocks, the first block of the trunk/auxiliary field is aligned with the left side of the system cabinet. See 110P-Type Terminal Blocks (900-Pair). This arrangement allows for growth on the right side of the MDF.

1. Route the cables from the rear of the cabinet stack to the MDF via the Cable Slack Manager. See Install Cable Slack Managers.

2. If you are installing 300-pair terminal blocks, draw a level horizontal line on the wall 47.5 in. (1.2 m) above the floor. See 110A-Type Terminal Blocks (300-Pair).

   If you are installing 900-pair terminal blocks, draw a level horizontal line on the wall 23 in. (58.4 cm) above the floor. See 110P-Type Terminal Blocks (900-Pair).

3. To mount the first trunk/auxiliary field terminal block, partially install 2 3/4-in. #12 wood screws, 7-11/16 in. (19.5 cm) apart on the left side of the horizontal line on the wall.
4. Slide the bottom terminal block ft onto the mounting screws and mark the upper mounting screw locations.
5. Remove the terminal block and partially install the upper mounting screws.
6. Place the terminal block on the mounting screws and tighten the screws.
7. If installing a vertical patch cord trough, partially install the first screw for the patch cord trough, on the line, 7/8-in. (2.2 cm) to the right of the previous screw. Partially install the second mounting screw 5.31 in. (13.5 cm) to the right of the screw just installed. Repeat Steps 4, 5, and 6.
8. If another trunk/auxiliary field terminal block is to be installed, partially install the first screw for the terminal block, on the line, 7/8-in. (2.2 cm) to the right of the previous screw. Partially install the second mounting screw 7-11/16 in. (19.5 cm) to the right of the screw just installed. Repeat Steps 4, 5, and 6.
9. If a horizontal patch cord trough is to be installed, install it, on the line, between the trunk/auxiliary field and the distribution field.
10. To install the first distribution field terminal block, partially install 2 3/4-in., #12 wood screws, 7-11/16 in. (19.5 cm) apart on the line, to the right of the vertical patch cord trough. Repeat Steps 4, 5, and 6.
11. If installing another distribution field terminal block, partially install the first screw for the terminal block, on the line, 7/8-in. (2.2 cm) to the right of the previous screw. Partially install the second mounting screw 7-11/16 in. (19.5 cm) to right of the screw just installed. Repeat Steps 4, 5, and 6.
12. If installing a vertical patch cord trough in the distribution field, repeat Step 6.
13. Repeat Steps 11 and 12 until all the terminal blocks and vertical patch cord troughs in the distribution field are installed.

110A-Type Terminal Blocks (300-Pair)

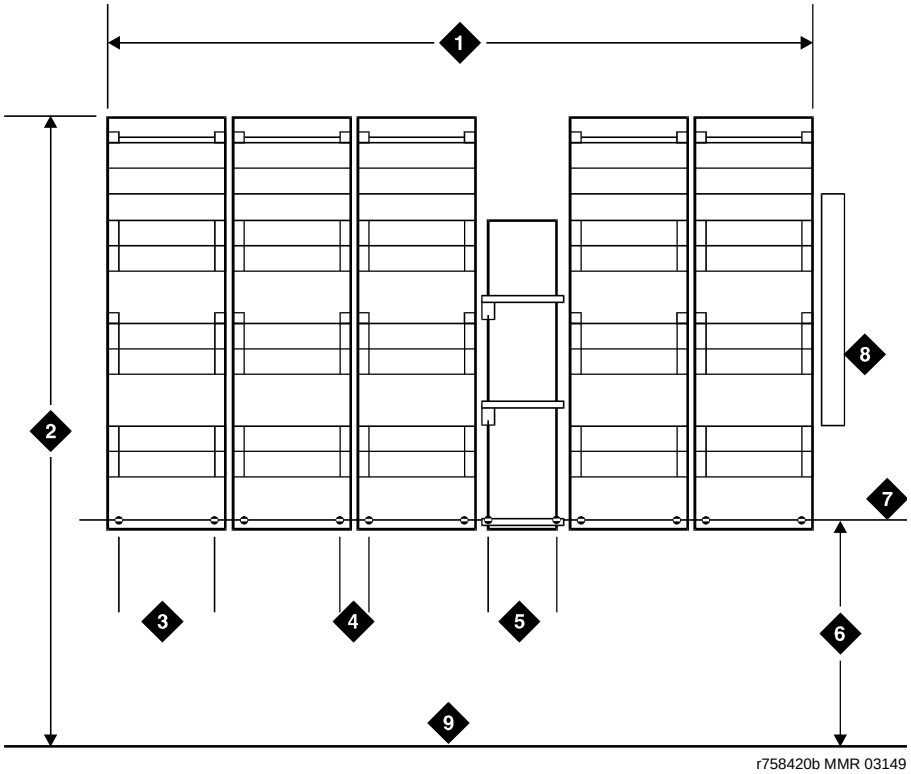


Figure Notes

[1] 4 ft (1.22 m)

[2] 6.6 ft (2 m)

[3] 7.68 in. (19.5 cm)

[4] 7/8-in. (2.22 cm)

[5] 5.31 in. (13.5 cm)

[6] 47.5 in. (120.6 cm)

[7] Horizontal Line

[8] AC Power Strip

[9] Floor Line

110P-Type Terminal Blocks (900-Pair)

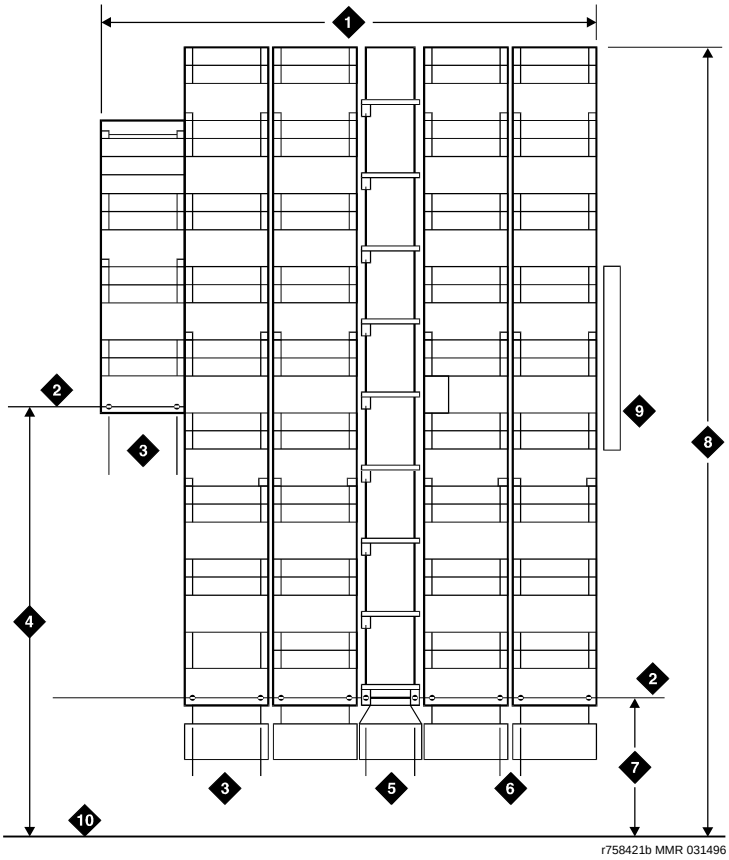


Figure Notes:

[1] 4 ft (1.22 m)

[2] Horizontal Line

[3] 7.68 in. (19.5 cm)

[4] 47.5 in. (120.6 cm)

[5] 5.31 in. (13.5 cm)

[6] 7/8-in. (2.22 cm)

[7] 23 in. (58.4 cm)

[8] 8 ft (2.43 m)

[9] AC Power Strip

[10]Floor Line

Return to Task List

Mount 110P-type terminal blocks on a frame

Begin

Return to Task List

The 900-pair 110P-type terminal blocks and the associated patch cord troughs can also be mounted on a free-standing, floor-mounted 1110A2 Apparatus Mounting Frame. See 1110A2 and 1110C1 Apparatus Mountings.

Each 1110A2 provides the space to mount 5 terminal blocks/patch cord troughs on each side of the frame. A cable support structure, apparatus mounting 1110C1, mounts directly on top of the 1110A2 and provides support for all cables routed to and from the frame. See Apparatus Mounting Frame Information

1110A2 and 1110C1 Apparatus Mountings

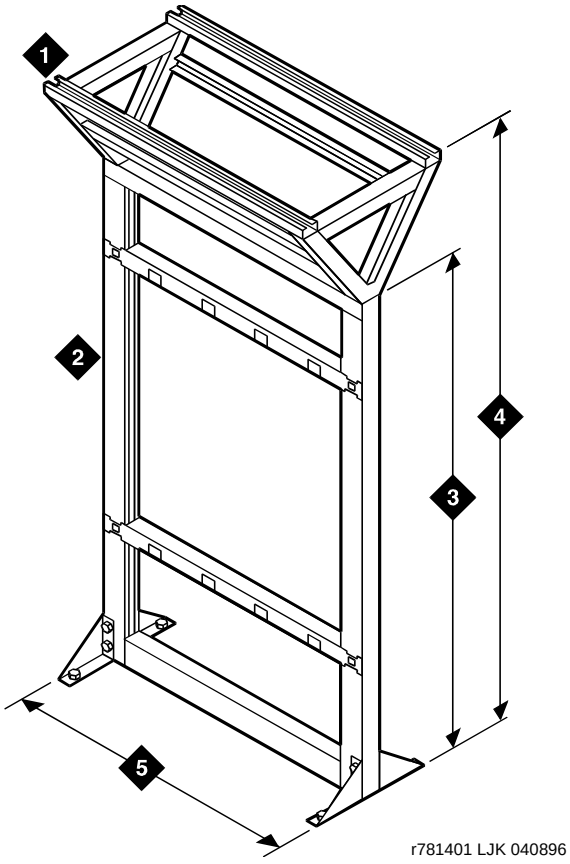


Figure Notes:

[1] 1110C1 Apparatus Mounting

[2] 1110A2 Apparatus Mounting

[3] 76 in. (193 cm)

[4] 88.5 in. (225 cm)

[5] 43.5 in. (110.5 cm)

Apparatus Mounting Frame Information	
Code Number	**Description**
1110A2	Apparatus Mounting Frame
1110C1	Cable Support Assembly
1110A1	End Dress Panel
2110A1	Top Dress Panel
2110B1	Bottom Dress Panel

Return to Task List

Install Cable Slack Managers

Begin

Return to Task List

1. Place the Z113A Cable Slack Manager against the wall under the MDF. See Cable Routing Through Cable Slack Manager (SCC1). Align the left side of the cable slack manager with the first terminal block of the trunk/auxiliary field.
2. Place the next cable slack manager beside the previously installed unit. Align the tabs and interlocks and snap the units together.
3. Repeat Step 2 until all cable slack managers are installed.

Note:
Nine 1/4-in. holes (0.63 cm) are provided in a cable slack manager base if earthquake mounting is required. If a base is mounted on an uneven floor, shims may be required for leveling and to assure proper fit of the covers.

Holes are provided in the sides of the base for bolting cable slack manager together. Bolts and shims must be obtained locally.

4. The system cables will route through the cable slack manager as shown. Complete cable routing is covered later in this chapter.

Cable clamps are required in installations with cable slack managers. At the rear of the cabinets, install 2 cable clamps using the screws provided. These clamps hold the 25-pair input/output or MDF cables in place. Cable Routing Through Cable Slack Manager (MCC1) and Cable Routing Through Cable Slack Manager (SCC1) show cable clamp placement and cable routing.

Cable Routing Through Cable Slack Manager (MCC1)

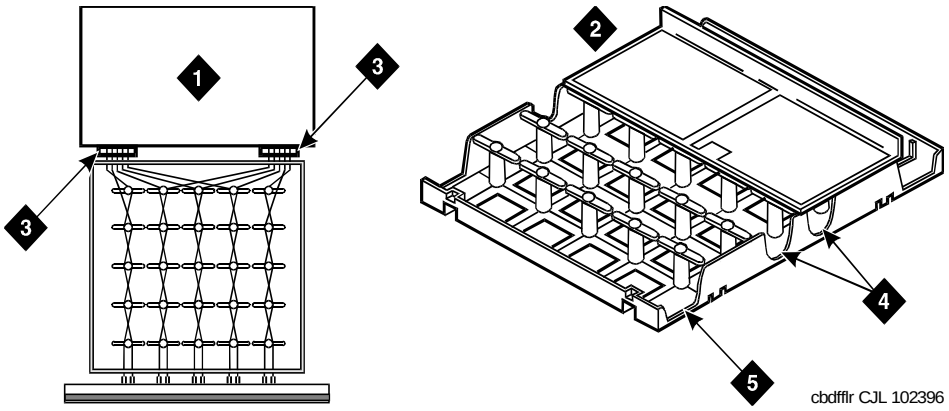


Figure Notes:

[1] Top of Cabinet

[2] Cable Slack Manager

[3] Cable Clamp

[4] Spare Center Troughs

[5] Cabinet Trough for Port Cables

Cable Routing Through Cable Slack Manager (SCC1)

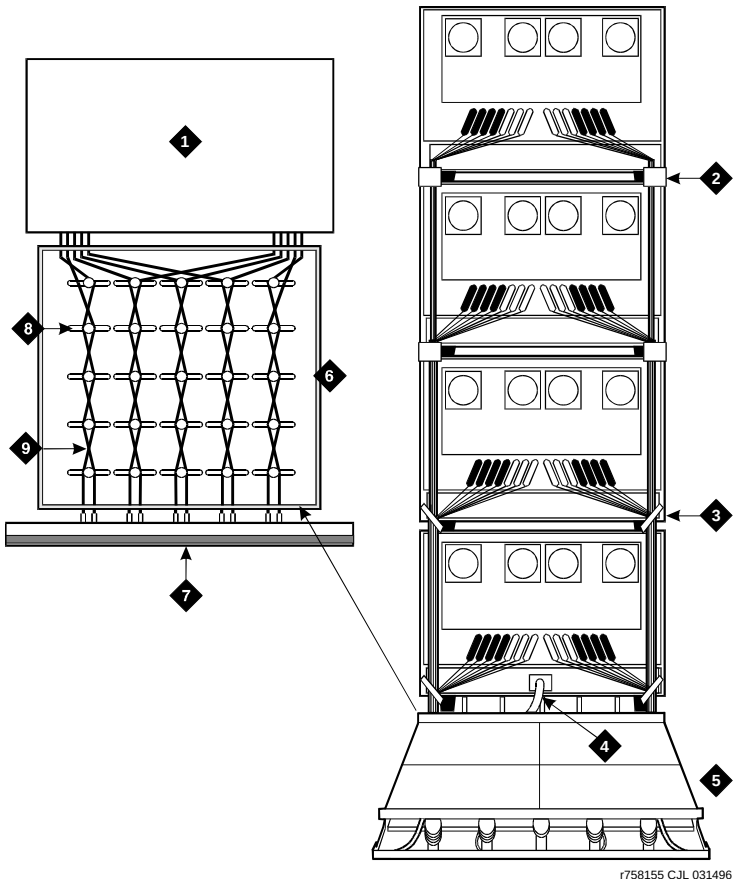


Figure Notes

[1] Top of System Cabinets

[2] Cable Clamps

[3] Cable Ties (Optional)

[4] Power Cord

[5] Cable Slack Manager

[6] Cable Slack Manager (Cover Removed)

[7] Main Distribution Frame (MDF)

[8] Route Cables Along Path Shown

[9] Port Cables

Return to Task List

Install Sneak Fuse Panels

Begin

Return to Task List

(For general information, see Sneak Fuse Panels.)

The Model 507B Sneak Fuse Panel, or equivalent, is recommended for sneak current protection. The panel contains two 25-pair connectors, fuse removal tool, and fifty

220029 sneak fuses (and two spares). See Sneak Fuse Connector Pinout for pinout data.

1. Locate the 507B near the network interface or the Main Distribution Frame (MDF).
2. Hold the panel against the mounting surface and mark the mounting screw locations. Drill pilot holes at the marked locations and partially install a locally obtained #12 x 3/4-inch screw into the two bottom mounting slots.
3. Slide the sneak fuse panel onto the mounting screws and tighten the screws securely.
4. Install a locally obtained #12 x 3/4-inch screw into the top two mounting slots and tighten securely.
5. Repeat the procedure for each sneak fuse panel.
6. Secure the B25A cable to the panel with the captive screw on the connector and a supplied cable tie.

Model 507B Sneak Fuse Panel

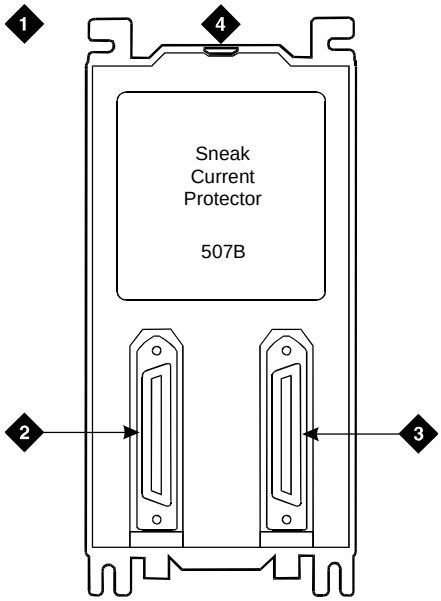


Figure Notes

[1] Sneak Fuse Panel

[2] 25-Pair Male Connector (In)

[3] 25-Pair Female Connector (Out)

[4] 220029 Fuses (Inside Panel). Use small screwdriver to pry top cover off.

Sneak Fuse Connector Pinout	
Connector Pin Numbers	**Pair/Fuse Number**
26/1	1
27/2	2
28/3	3
29/4	4
30/5	5
31/6	6
32/7	7
33/8	8
34/9	9
35/10	10
36/11	11
37/12	12
38/13	13
39/14	14
40/15	15
41/16	16
42/17	17
43/18	18
44/19	19
45/20	20
46/21	21
47/22	22
48/23	23
49/34	24
50/25	25

Return to Task List

Install Coupled Bonding Conductor

Begin

Return to Task List

The Coupled Bonding Conductor (CBC) connects to the single-point ground block and runs adjacent to pairs in an associated telecommunications cable. The mutual coupling between the bonding conductor and the pairs reduces potential differences in terminating equipment.

1. Cut a 10 AWG (#25) (2.5 mm^2) wire long enough to reach from the system's single-point ground block or DC power cabinet Ground Discharge Bar to the MDF CBC block.

2 Connect one end of the 10 AWG (#25) (2.5 mm^2) wire to the single-point ground block (or Ground Discharge Bar).

3 Route the wire next to the 25-pair cables connecting to the trunk/auxiliary (purple) field.

4 Tie wrap the 10 AWG (#25) (2.5 mm^2) wire to the 25-pair cables.

5 Connect the 10 AWG (#25) (2.5 mm^2) wire to the MDF CBC ground block.

6 Repeat the above steps for each CBC ground wire installed.

Coupled Bonding Conductor

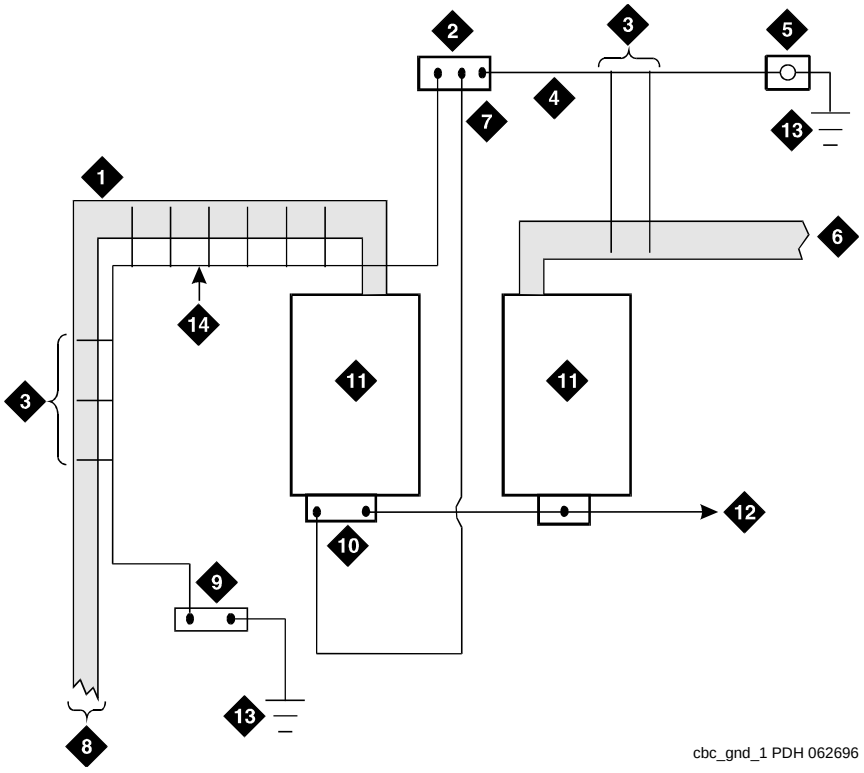


Figure Notes

[1] 25-Pair Tip & Ring Cables to Cabinets

[2] Coupled Bonding Conductor (CBC) Terminal Block

[3] Tie Wraps

[4] Cable Shield or Six Spare Pairs

[5] Ground on Carbon Block Protector or Equivalent

[6] Trunk Cable to Network Interface

[7] 10 AWG (#25) (2.5 mm^2) Wire

[8] To Network Cabinets

[9] Battery Plant Ground Discharge Bar for Single-Point Ground

[10] Cross-Connect Ground Block

[11] Main Distribution Frame (MDF)

[12] To Other Cross-Connect Ground Blocks

[13] Approved Ground

[14] Coupled Bonding Conductor (CBC)

Return to Task List

Bring the System Online

This section provides

- information about installing the system access software, activating the system, administering the system, and powering a DEFINITY AUDIX system.
- procedures for doing the installation and administration.

Information about Installing the Software, Administering the System, and Powering a DEFINITY AUDIX System

- About Accessing the System
- Administration Screens and Commands
- Administering the Circuit Packs
- DEFINITY AUDIX System Power Procedures

Task List: Setting up the PC and Administering the System

1. Access the System
2. Activate the System
3. Administer the System

   If necessary, administer the Circuit Packs (See Administering the Circuit Packs for general information)
4. Reboot High Reliability System (MCC1 only)
5. Enable Duplication and Boot Critical Reliability System (Avaya DEFINITY Server r)
6. Administer Attendant Console
7. Save Translations (Avaya DEFINITY Server si) or Save Translations (Avaya DEFINITY Server r)
8. Administering Fiber Optic Cables
9. Add Translations (Avaya DEFINITY Server si) or Add Translations (Avaya DEFINITY Server r)
10. Resolve Alarms
11. Register the Switch for Maintenance
12. Log off the System

About Accessing the System

To administer the Avaya Media Gateway, you must be able to access the system. The Avaya Media Gateway no longer requires a dedicated management terminal, known as a system administration terminal, or SAT. Personal computers and technician laptops equipped with Avaya Site Administration software are the primary support access for system initialization, aftermarket additions, and ongoing maintenance. SAT is now an option.

Administration Screens and Commands

The system is administered using screens displayed on the PC. The screens are used to add, change, display, list data, and to remove system and telephone features. To access a screen, enter a valid system command in response to the **command:** prompt.

System commands are standard words and phrases instructing the system to perform a specific function. The commands are arranged in a hierarchy of keywords; that is, enter one command to go to a different level. The commands contain three parts: ACTION, OBJECT, and QUALIFIER.

- ACTION is the first part of the command. When **command:** appears on the screen. The ACTION specifies the operation desired. Examples include **add, duplicate, change, remove, display, list,** and **save.**
- OBJECT is the second part of the command and specifies the particular object to be administered. Typical entries are **hunt-group, coverage path,** and **station.**
- QUALIFIER is the last part of the command. It is one or more words or digits used to further identify or complete the OBJECT. For example, *hunt group 15* or *station 3600*, where *15* and *3600* are qualifiers.

An example of the command line required to add a station with extension number *1234* is **add station 1234**. In this example, **add** is the ACTION, **station** is the OBJECT, and **1234** is the QUALIFIER. In the command line, spaces are required between the ACTION, OBJECT, and QUALIFIER.

To save time, enter enough letters for each part of the command to make it unique. For example, if you want to enter the command **change system-parameters country-options**, typing **cha sys coun** is sufficient.

Note:
The craft or dadmin logins may not be allowed to perform some of the steps needed to initialize the system. If access is denied to some of these procedures, contact Avaya for assistance.

Use the **Help** key for a list of options and the **Cancel** key to back out of any command. Refer to the *Administrator's Guide for Avaya Communication Manager* for detailed procedures.

Administering the Circuit Packs

After the equipment is installed (including circuit packs), the circuit packs must be administered. This section provides brief information about:

- Administration Commands
- Change Circuit Packs Form
- Change Circuit Pack Form Implementation Notes

Refer to the *Administrator's Guide for Avaya Communication Manager* for more information.

In general:

- Use the **Circuit Packs** screen to administer circuit packs to carrier slots. The circuit packs must be installed (or assigned using the **Circuit Packs** form) before administering voice terminals, attendant consoles, or trunks.
- Each page represents one carrier in the cabinet shown on the command line. All carriers and slots appear even if they are not included in the hardware.

- It is not necessary to fill in the **Circuit Packs** screen if the circuit packs are installed at the time of administration.
- For initial installation, assign circuit packs to slots using the hardware configuration layout record from the factory or Customer Services Organization. Do not arbitrarily assign circuit packs to slots.
- **For r:** If the carrier type administered on the **Cabinet Administration** form does not match the physical hardware, question marks (**??**) may display in the **Code** fields.
  For si: When a circuit pack in a slot differs from what has been administered on the form, # displays between the **Sfx** and **Name** fields.
- **For r**: The number of slot fields displayed represents administrable slots for the given carrier type.
  For si: All slot fields are displayed.

Administration Commands

Use the following administration commands to administer the **Circuit Pack** form.

Action	Object	Qualifier
change	circuit-packs	xx (cabinet number)
display	circuit-packs	xx (cabinet number) [’print’ or ‘schedule’]

Note:
If no cabinet number is specified, this command defaults to “1.”

Change Circuit Packs Form

Note:
Each page of the form represents 1 carrier within the cabinet specified on the command line. All carriers and slots appear even if they are not included in the actual hardware. This supports reconfiguration.

- **Cabinet** — Display-only field. This field shows the cabinet number as entered on the command line.
- **Carrier** — Display-only field. This field shows the letter of the carrier (A through E) circuit packs are being administered on.
- **Carrier Type** — Display-only field. This field shows the type of carrier.
- **Slot** — Display-only field. The slot equates to the physical slot of the given carrier; the number of slots displayed depends on the system being configured.

  For si configurations: ALL slots that could possibly be administered are displayed even if they do not apply to the current configuration of the system. This is to accommodate the situation when a system is being reconfigured.

  Circuit Pack Cabinet Layout lists the slots to use, and the circuit pack types that may be administered in those slots, for each combination of Cabinet/Carrier/Carrier Type in an si configuration.
- **Code** — Enter the circuit pack code (**TN** followed by a 3- or 4-digit number). If there is a physical circuit pack installed in the slot, the entry must match that of the circuit pack. If there is equipment administered on a slot, the equipment must be removed from the circuit pack before the circuit pack can be changed or removed.
- **Sfx** — Enter the circuit pack suffix, if applicable.

- **Name** — Display-only field. This field shows the alphanumeric name of the circuit pack (such as Digital Line).

Note:
When the circuit pack physically inserted in the slot differs from what has been administered on this form, a # displays between the **Sfx** and **Name** fields.

Circuit Pack Cabinet Layout

Cabinet Layout	Carrier Type	Use Slots	Circuit Pack Types
1A (SCC1 Basic Control Cabinet)	processor	01-10	All port circuit packs
1A (SCC1 Enhanced Control Cabinet)	processor	01-16	All port circuit packs
1B (SCC1 Duplicated Control Cabinet)	processor	01-10	All port circuit packs
1B, C, D (SCC1 Port Cabinet)	port	01-18	All port circuit packs
2A & 3A (SCC1 Expansion Control Cabinet)	expansion-control	01	TN570, TN776
		02-17	All port circuit packs
2B, C, D (SCC1 Port Cabinet) 3B, C, D	port	01-18	All port circuit packs

Change Circuit Pack Form Implementation Notes

Change Circuit-Packs Screen shows all fields that may be displayed. The fields that appear on a particular screen may vary depending upon the system configuration being administered.

The number of slot fields displayed may vary depending on the system being configured.

Change Circuit-Packs Screen

```
change circuit-packs                                    Page   1 of   5
                          CIRCUIT PACKS
       Cabinet: 1                              Carrier: A
                                            Carrier Type: processor
 Slot Code  Sf Mode   Name
  01: TN758          POOLED MODEM
  02: TN726  B       DATA LINE
  03: TN763  D       AUXILIARY TRUNK
  04: TN750  C       ANNOUNCEMENT
  05: TN2181         DIGITAL LINE
  06: TN464  F       DS1 INTERFACE
  07: TN2138         CO TRUNK
  08: TN754  B       DIGITAL LINE
  09: TN799  B       CONTROL-LAN
  10: TN767  D       DS1 INTERFACE
 Slot Code  Sf Mode   Name               Slot Code  Sf Mode   Name
                                       11: TN464  F      DS1 INTERFACE
  01: TN758         POOLED MODEM        12: MEDPRO        RESERVED-IP
  02: TN726  B       DATA LINE          13: TN802  B      MAPD BOARD
  03: TN763  D      AUXILIARY TRUNK      14: TN2149        ANALOG LINE
  04: TN750  C      ANNOUNCEMENT        15: TN754  B      DIGITAL LINE
  05: TN2181        DIGITAL LINE        16: TN754  B      DIGITAL LINE
   '#' indicates circuit pack conflict.
```

DEFINITY AUDIX System Power Procedures

Manually Power Down AUDIX System

A yellow caution sticker on the system's power unit notifies technicians to shut down the DEFINITY AUDIX System prior to powering down the system.

1. Using a pointed object such as a paper clip or pen (do not use a pencil), press the Boot/Shutdown button. The button is located at the top right portion of the front panel.
2. Hold the Boot/Shutdown button in until the LCD display flashes the message **MSHUT.**
3. Release the Boot/Shutdown button.

Note:
The DEFINITY AUDIX System takes about five minutes to shut down. The "heartbeat" indication on the display continues to flash.

Manually Power Up AUDIX System

1. Using a pointed object such as a paper clip or a pen (do not use a pencil), press the Boot/Shutdown button.
2. Hold the Boot/Shutdown button in until the display indicates the message, **BTEST**, steady on.
3. Release the Boot/Shutdown button. The DEFINITY AUDIX System takes approximately five minutes to power up.
   - ~ The display has the following sequence of steady on messages:
     - **OSINIT**
     - **OS**
     - **AINIT**
     - **ADX**
   - ~ The DEFINITY AUDIX System is now powered up. When the system is in the active state, the display indicates **ADX**, and the red LED is off.

Note:
Upon the system powering up, the DEFINITY AUDIX System automatically reboots. This sequence may show an **MD** or **MJ ADX** alarm in the display until the system has powered up. When the system has completed its power up sequence, the DEFINITY AUDIX System display reads: **ADX**.

Access the System

Return to Task List

To access the system, you first install Avaya Site Administration software on the PC and then connect to the Avaya Media Gateway. Select the correct procedures for this installation from the task lists.

Task List: Access the system

- Install and Use Avaya Site Administration
- Connect Directly to the Avaya Media Gateway
- Connect Remotely to the Avaya Media Gateway Through a Data Module
- Connect Remotely to the Avaya Media Gateway Through a Modem

Task List: Make Data Module Settings

1. Set the Data Module to DCE Mode if necessary
2. Add a Data Module to the Switch
3. Test Data Module Hardware Connections
4. Set the Data Module Operating Mode
5. Set the 7400B+ Data Module Options

Install and Use Avaya Site Administration

Begin

Return to Task List

To install Avaya Site Administration, your PC or laptop must meet the minimum requirements described in Minimum requirements to run Avaya Site Administration:

To install Avaya Site Administration on your computer, place the Avaya Site Administration CD in the CD-ROM drive and follow the installation instructions. To start Avaya Site Administration, click on

Start > Programs > Avaya Site Administration.

Avaya Site Administration supports SAT emulation, which is directly equivalent to using the SAT. Avaya Site Administration also supports a whole range of other features, including the graphically enhanced DEFINITY interface (GEDI) and Data Import. For more information refer to the Help, Guided Tour, and Show Me accessed from the Help menu.

Minimum requirements to run Avaya Site Administration	
Operating systems: MS Windows 95 MS Windows 98 MS Windows NT 4.0 MS Windows 2000	*Processor/RAM:* 486SL/66/16 MB Pentium/32 MB Pentium/64 MB Pentium-class 300 MHz/64 MB
Graphics adapter	SVGA with minimum screen resolution of 800 x 600
Floppy disk drive	3-1/2 in. 1.44-MB floppy disk drive
CD-ROM	CD-ROM drive (required to install Avaya Site Administration from CD)
Available hard disk space	A minimum of 100-MB free hard disk space is required. The requirement for disk space depends on the size and number of configuration data sets.

Minimum requirements to run Avaya Site Administration	
Printer port	Standard PC or network printer port is required for connecting to a printer to produce station button labels.
Network adapter	May be required for network access to AUDIX and other network-connected systems.
Free serial ports	One free serial port capable of 9600-bps operation is required for a connection to each serial device (ADU, modem, data module) or direct connection to a Avaya Media Gateway. We recommend that PCs have at least a 16550A UART or 16550A UART simulator (capable of 56 kbps DTE-speed connections). USB and internal modems should emulate this hardware. A second serial port is required for simultaneous connection to AUDIX through a serial connection.

Return to Task List

Connect Directly to the Avaya Media Gateway

Begin

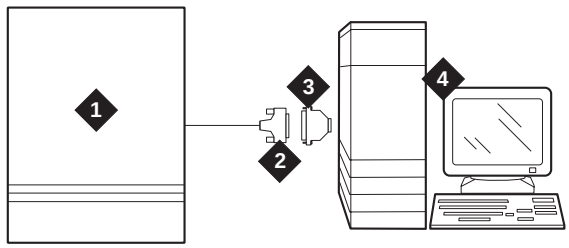
Return to Task List

You can connect directly from the PC if it is 50 ft (15 m) or less from the Avaya Media Gateway.

Connect the equipment as shown in A typical direct connection. Also see PC connections by platform.

CAUTION:
For a DC-powered system, install an EIA 116A Isolator in series between the cable and the TERM, DOT, or Terminal Active connector.

A typical direct connection



cydfdr23 KLC 090700

Figure Notes:

[1] Avaya Media Gateway PPN

[2] 50-ft (15-m) M25A cable (RS-232)

[3] 9-to-25 pin adapter if needed

[4] Computer with Avaya Site Administration

PC connections by platform			
Reliability	**r**	**si**	**csi**
Standard	Terminal Active	TERM	TERM
High/Critical	—	DOT	—

Return to Task List

Connect Remotely to the Avaya Media Gateway Through a Data Module

Begin

Return to Task List

If the PC is more than 50 ft (15 m) from the Avaya Media Gateway, you can connect it through a data module.

1. Connect the equipment as shown in A typical remote connection using an 8400B (top) or 7400B (bottom) data module.

Note:
With a 7400A or 7400B+ data module, use a 4-wire digital line circuit pack. With the 8400B+ data module, use a 2-wire digital line circuit pack.

In place of a 7400B+ data module, you can use a 7400A data module. If you do, see Set the Data Module to DCE Mode.

2. Wire the digital line circuit pack to the wall jack as follows:
   - For a 7400B+, wire to the second and third pair of the wall jack.
   - For an 8400B+, wire to the first pair of the wall jack.

After connecting the data module, check the Set the Data Module to DCE Mode and perform any necessary tasks.

Return to Task List

A typical remote connection using an 8400B (top) or 7400B (bottom) data module

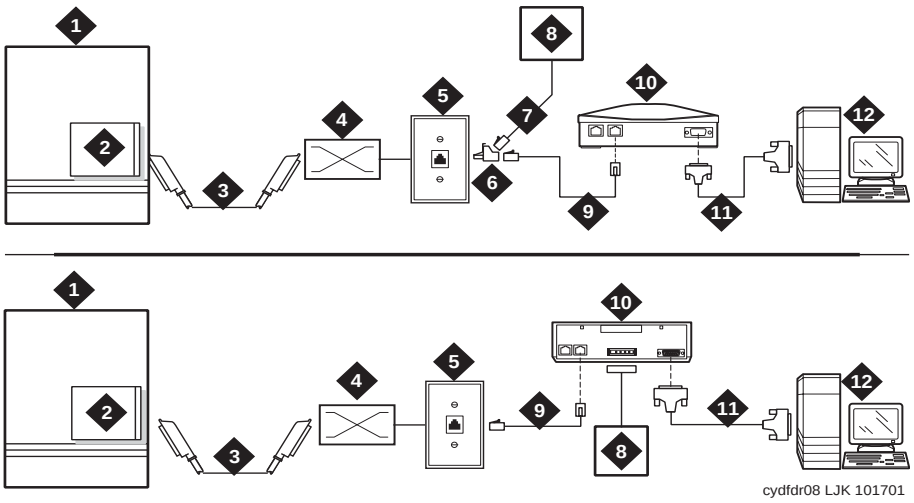


Figure Notes:

[1] Avaya Media Gateway

[2] Digital line circuit pack

[3] B25A 25-pair cable

[4] Main distribution frame (MDF)

[5] 103A or Avaya modular wall jack

[6] 400B2 adapter

[7] D6AP power cord (8400B+ only)

[8] Data module power supply

[9] 7-ft (2-m) D8W modular cord

[10] Data module (8400B+ [top] or 7400B+ [bottom])

[11] 50-ft (15-m) M25A cable (RS-232)

[12] Computer with Avaya Site Administration

Return to Task List

Connect Remotely to the Avaya Media Gateway Through a Modem

Begin

Return to Task List

You can connect a PC to the Avaya Media Gateway through an analog modem to an INADS port.

Connect the equipment as shown in A typical remote connection through a modem to access a remote Avaya Media Gateway.

Follow these steps to connect to the Avaya Media Gateway through a modem.

1. Connect the computer to the modem.
2. Connect an analog telephone line to the leftmost analog-line port on the modem.
3. Make sure that the modem's DIP switches are set as shown in U.S. Robotics Modem DIP Switch Settings.
4. Plug the modem into an AC power outlet.
5. Turn on the modem.
6. Set the following port settings:

Baud rate	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	hardware

A typical remote connection through a modem to access a remote Avaya Media Gateway

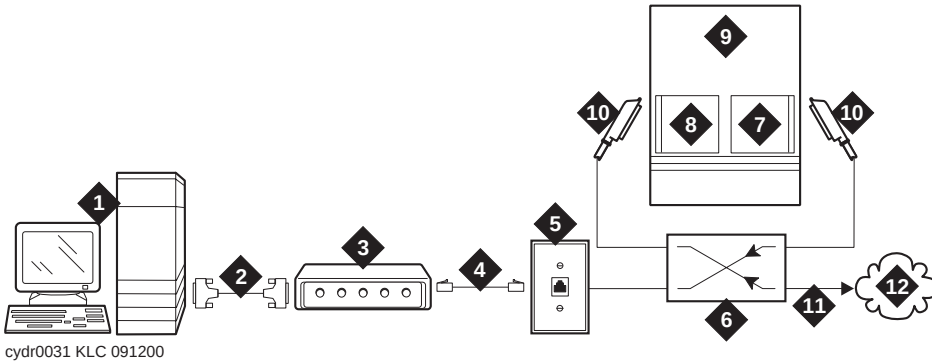


Figure Notes:

[1] Computer with Avaya Site Administration

[2] 50-ft (15-m) M25A cable (RS-232—9-25 pin adapter if needed)

[3] Analog modem

[4] 7-ft (2-m) D2W modular cord

[5] 103A or Avaya modular wall jack

[6] Main distribution frame (MDF)

[7] Analog line circuit pack

[8] Analog trunk circuit pack
Packet data line (r)
Data line (r)

[9] Avaya Media Gateway

[10] B25A cable

[11] Analog line

U.S. Robotics Modem DIP Switch Settings		
Dip Switch	**Setting**	**Description**
1	UP **DOWN**	Data Terminal Ready normal **Data Terminal Ready override**
2	UP **DOWN**	Verbal result codes **Numeric result codes**
3	UP **DOWN**	Suppress result codes **Display result codes**
4	UP **DOWN**	Echo offline commands **No echo, offline commands**
5	UP **DOWN**	Auto answer on first ring or higher if specified in NVRAM Auto answer off

U.S. Robotics Modem DIP Switch Settings		
Dip Switch	**Setting**	**Description**
6	UP **DOWN**	Carrier detect normal **Carrier detect override**
7	UP **DOWN**	Load NVRAM defaults **Load factory defaults**
8	UP **DOWN**	Dumb mode **Smart mode**

Return to Task List

Set the Data Module to DCE Mode

Begin

Return to Task List

1. Cycle the power to the data module.

   The unit performs a self test and displays its operating mode. Observe the display.

   If the display reads DCE mode, proceed to Add a Data Module to the Switch.

2. If the display reads DTE mode, reverse the mode select circuit board:

   Remove the power cord from the unit, remove the cover from the top rear of the unit, remove the mode select circuit board and turn it around, replace the cover, and connect the power cord.

   The unit performs a self test.

Note:
The power LED must be steady on. If the power LED is blinking, the data module is not communicating with the Avaya Media Gateway. Check the wiring at the MDF, wall jacks, and data module.

Return to Task List

Add a Data Module to the Switch

Begin

Return to Task List

1. Add the data module administratively to the switch by typing **add data-module *number*** or **add data-module next** and pressing **Enter**.
2. In the **Type:** field, type **pdm** and press **Enter**.
3. In the **Port:** field, type the location of the digital line circuit pack connected to the data module (for example 01A1503).
4. If system access ports and hunt groups have not been set up, set them up.

   Refer to the *Administrator's Guide for Avaya MultiVantage Software*.

Return to Task List

Test Data Module Hardware Connections

Begin

Return to Task List

Find your data module in the table below and follow the instructions for testing and troubleshooting it.

Type of Data Module	How to Test and Troubleshoot
8400B+	The red LED should be steady on. If the red and green LEDs are blinking, the unit is not communicating with the Avaya Media Gateway. Check the wiring at the MDF, wall jack, and the 8400B+.
7400B+	The Power and TR LEDs should be steady on. If the Power and Data LEDs are blinking, the unit is not communicating with the Avaya Media Gateway. Check the wiring at the MDF, wall jack, and the 7400B+.
7400A	Set the 7400A to DCE mode. The Power LED must be steady on. The DTR, DSR, DCD, RTS, and CTS settings must be highlighted in the display. If the Power LED is blinking, the data module is not communicating with the Avaya Media Gateway. Check the wiring at the MDF, wall jack, and 7400A.

Return to Task List

Set the Data Module Operating Mode

Begin

Return to Task List

1. Connect an RS-232 cable from the Avaya Site Administration computer to the data module.
2. If you are using an 8400B+, connect the Avaya Site Administration computer to the data module using the supplied adapter cable.
3. Using a terminal emulator, connect to the serial port to which the data module is connected, and set the emulation to ***vt100*** mode.
4. Type **AT** at the prompt and press **Enter**.
5. The data module should return an OK. If it does not, be sure that a standard RS-232 or EIA-232 cable is connected (not a null modem cable).
6. Set the operating mode:

Type of Data Module	How to set the operating mode
8400B+	Type **AT&F** and press **Enter**. Type **ATS24=1** and press **Enter**. Type **AT&WØ** and press **Enter** to save the operating mode into non-volatile RAM.
7400A 7400B+	Type **AT&F** and press **Enter**. Type **AT&WØ** and press **Enter** to save the operating mode into non-volatile RAM.

7. Disconnect the terminal from the data module and reconnect the data module to the system cabling.

Return to Task List

Set the 7400B+ Data Module Options

Begin

Return to Task List

1. Set the DIP switches for the 7400B+ using DIP Switch Settings (7400B+).

   The DIP switches are located inside the unit. To access them, remove the power cord from the unit, remove the cover from the top rear of the unit, set the dip switches, replace the cover, and connect the power cord.

   The unit performs a self test.

2. If any switches were set in step 1, cycle the power to the data module so that the firmware can read the new switch settings.

DIP Switch Settings (7400B+)		
Option	**DIP Switch**	**Setting**
No Telephone Connected	1	On
Data Metering	5	Off
Suppress Touch-tone/Dial Tone	6	Off
Speakerphone Disable/Enable	7	Off
Busyout on Local Loop	8	Off
Unused DIP Switches	2, 3, and 4	Off

Return to Task List

Activate the System

Return to Task List

Note:
To prevent unnecessary trouble tickets, do not enable the system alarms (Alarm Origination feature) until all installation and administration procedures are completed.

CAUTION:
It may be necessary to reseat circuit packs. To prevent damage from static electricity, always wear an Electromagnetic Compatibility (EMC) wrist strap when handling all system components.

Task List: Activate the System

1. Install Translation Flash Memory Card (Avaya DEFINITY Server si) or Install Removable Media (MCC1 only)
2. Power Up AC-Powered System or Power Up DC-Powered System
3. Verify Messages on Terminal

Return to Task List

Install Translation Flash Memory Card (Avaya DEFINITY Server si)

Begin

Return to Task List

1. Insert the translation card into processor circuit pack.

Return to Task List

Install Removable Media (MCC1 only)

Begin

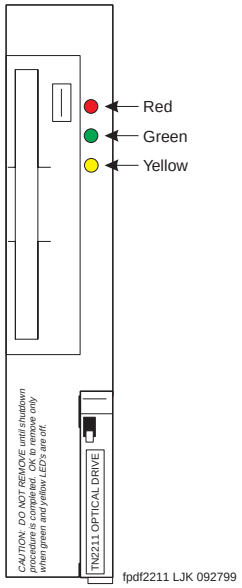
Return to Task List

Insert the formatted removable media, label facing left, into the optical drive (see TN2211 Optical Drive).

Note:

Make sure the formatted removable media is not write-protected (see Make sure the disk is not write protected) before placing it into the optical drive.

TN2211 Optical Drive


Red
Green
Yellow
CAUTION: DO NOT REMOVE until shutdown procedure is completed. OK to remove only when green and yellow LED's are off.
TN2211 OPTICAL DRIVE
fpdf2211 LJK 092799

Make sure the disk is not write protected

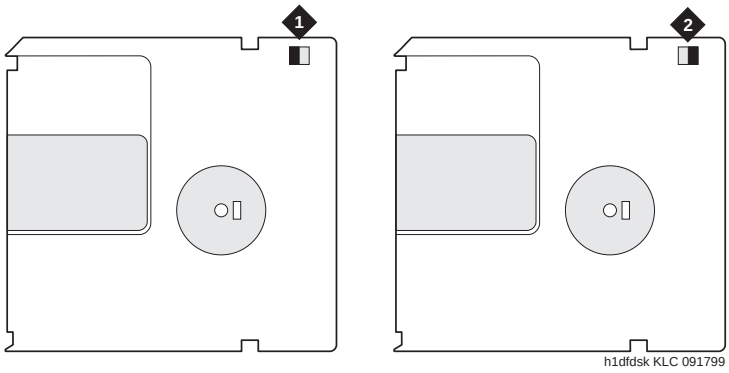


Figure Notes:

[1] Not write protected

[2] Write protected

Return to Task List

Power Up AC-Powered System

Begin

Return to Task List

1. Set the associated circuit breakers on the AC power panel **ON**.

Note:
If the system is high or critical reliability, power-up the Expansion Port Network (EPN) first, then the Processor Port Network (PPN). *Always* power up the control cabinet *last*.

2. At the rear of each cabinet, set the circuit breaker to **ON**. This starts the system initialization and test. Some red lights may be on but will be turned off by other procedures in this chapter.

Power Up DC-Powered System

Begin

Return to Task List

1. At the DC Battery Cabinet (if installed), set the circuit breaker to **ON**.
2. At the DC Power Cabinet, set the circuit breakers on the associated rectifiers **ON**.

   This starts the system initialization and test. Some red LEDs may be on but are turned off by other procedures in this section
3. At the rear of each Power Distribution Unit (if installed), set the circuit breaker to **ON**.

Note:
If the system is high or critical reliability, power-up the Expansion Port Network (EPN) first, then the Processor Port Network (PPN). *Always* power up the control cabinet *last*.

Return to Task List

Verify Messages on Terminal

Begin

Return to Task List

1. After several minutes, verify all tests pass. Typical Start-up Messages displays the screen of a typical DEFINITY ECS.

Note:
If any of the screen messages indicate a test has failed or if the message “**spe down mode**” is displayed, refer to the *Maintenance for Avaya MultiVantage DEFINITY Server* manual for the system to clear the trouble, or call your Avaya representative.

4. About two minutes after **REBOOT PERFORMED** is displayed, verify the screen displays: **Login:**

Typical Start-up Messages

```
INTERNAL REGISTER TEST                PASSED
LOOP DATA TEST                        PASSED
DUART TEST                            PASSED
ROM CHECKSUM TEST                     PASSED
CONTROL STATUS TEST                   PASSED
DCACHE TEST                           PASSED
ICACHE TEST                           PASSED
WRITE BUFFER TEST                     PASSED
BTO TEST                              PASSED
MEM CONFIG TEST                       PASSED
MEMORY FUNCTIONAL TEST                PASSED
MEMORY MODULE A STUCK BIT TEST        PASSED
MEMORY MODULE A PARITY TEST           PASSED
MEMORY MODULE A BURST TEST            PASSED
MEMORY MODULE B STUCK BIT TEST        PASSED
MEMORY MODULE B PARITY TEST           PASSED
MEMORY MODULE B BURST TEST            PASSED
MEMORY MODULE C STUCK BIT TEST        PASSED
MEMORY MODULE C PARITY TEST           PASSED
MEMORY MODULE C BURST TEST            PASSED
VIRTUAL MEMORY TEST                   PASSED
EXCEPTION TEST                        PASSED
TIMER TEST                            PASSED
MTP TEST                              PASSED
SANITY TIMER TEST                     PASSED
ADDRESS MATCHER TEST                  PASSED
FLASH DATA CHECKSUM TEST              PASSED
RAM DATA CHECKSUM TEST                PASSED
RESET 4 (REBOOT PERFORMED)
```

Return to Task List

Administer the System

Return to Task List

Note:
The following sections describe some of the procedures used to access and change certain options. These sections are not intended to replace or modify the instructions provided in the *Administrator's Guide for Avaya Communication Manager*.

Task List: Administer the System

1. Log in to the System
2. Deliver or install the License File
3. Administer no-license/emergency numbers
4. Change Site Data (MCC1 only)
5. Change Cabinet 1 (MCC1 only)
6. Add Cabinet 2 through N (AvayaDEFINITY Server r)
7. Set Country Options
8. Change the Password
9. Set Daylight Savings Rules
10. Set Date and Time

Log in to the System

Begin

Return to Task List

1 Log in as **craft**.

Note:
If you have a **dadmin** login and password, you can use them instead of craft and the craft password. You may have to contact Avaya to get the **dadmin** password.

2 Verify the screen displays **password**:

3 Type the default password and press **Enter**.

For security reasons, the password is not displayed as it is typed. The system verifies a valid login and password name were entered.

4 If an invalid login or password name was entered, the screen displays **login incorrect:** In this case, repeat the procedure using the correct login and matching password.

5 If the system recognizes the login and password name, the screen displays the software version. Verify the screen display is similar to:

Terminal Type (513, 715, 4410, 4425, VT220): [715]

6 Type the number of the management terminal and press **Enter**.

7 Verify the screen displays **command**:

Return to Task List

Deliver or install the License File

Begin

Return to Task List

CAUTION:
This procedure must be done immediately after you upgrade the software. If the license file is not installed within 10 days, the switch enters a No-License mode and shuts down all call processing.

New Duplicated G3r installations only

1 Retrieve the RFA License File with both serial numbers from the RFA Application.

2 Type **set time** and press **Enter**.

Ensure that the system date and time are set correctly.

3 Use one of these installation methods:

- Direct connection between the switch and RFA
- No connection between the switch and RFA

4 Type **save translation** and press Enter.

After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.

5 Type **reset system 4** and press Enter.

Wait until the system has completely reset before continuing.

6 Type **change cabinet 1** and press Enter.

In the `Carrier Type` column change the “B” carrier to **processor** and submit the form.

7 Type **change system-parameters duplication** and press Enter.

Set the `Enable Operation of SPE Duplication` field to **y** and submit the form.

8 Type **save translation** and press Enter.

After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.

9 Type **reset system 3 preserve-license** (or **reset system 3 no-preserve-license**, since the License File has been saved in translations) and press Enter.

New simplex and upgraded G3r only

1 Type **save translation** and press **Enter**.

After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.

2 Type **reset system 3** and press **Enter**.

Wait until the system has completely reset before continuing.

3 If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.

This disconnects (unregisters) all IP endpoints.

4 Type **set time** and press **Enter**.

Ensure that the system date and time are set correctly.

5 Use one of these installation methods:

~ Direct connection between the switch and RFA

~ No connection between the switch and RFA

New or upgraded G3si only

1 Retrieve the RFA License File with both serial numbers from the RFA Application.

2 If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.

This disconnects (unregisters) all IP endpoints.

3 Type **set time** and press Enter.

Ensure that the system date and time are set correctly.

4 For *duplicated systems only* type **status system all** and press Enter.

Ensure that the standby SPE is *not* in the maintenance state. If it is, wait for the maintenance state to finish.

5 Use one of these installation methods:

~ Direct connection between the switch and RFA

~ No connection between the switch and RFA

Direct connection between the switch and RFA

1 Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

Note:
This procedure sends the License File to the switch and installs it.

2 If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

   This re-registers the IP endpoints.

No connection between the switch and RFA

1 Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.

2 Open the License Installation Tool (LIT) application at your laptop/PC.

3 Use the LIT instructions to add a switch connection profile to the tool.

4 Use the LIT instructions to install the License File on the switch.

5 If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

   This re-registers the IP endpoints.

CAUTION:

Return to Task List

Administer no-license/emergency numbers

Begin

Return to Task List

If the system enters a No-License mode, the switch only processes emergency calls. Use this procedure to adminster the emergency numbers for No-License mode situations.

1 At the SAT, type **change system-parameters features** and press **Return**.

   The Feature-Related System Parameters screen displays.

2 In the **Emergency Numbers - Internal** field (optional) type a valid extension.

Note:
This field is intended for campus environments where there is an internal emergency number that people are directed to use instead of 911. Calls to other extensions will not go through. This number cannot be a hunt group or ACD number.

3 In the **Emergency Number - External** field (required) type a 21-digit, dialpad-valid character string that can include trunk access codes. The default for this field is 911.

4 In the **No-License Incoming Call Number** field (optional) type a valid extension.

Note:
All calls are not rerouted to this number; only calls to this number get through. This number cannot be a hunt group or ACD number.

5 Press **Enter** to save the changes.

Return to Task List

Change Site Data (MCC1 only)

Begin

Return to Task List

This screen initializes the building, floor, and color data to make them available later in help messages that refer to site.

1. Type **change site-data** and press **Enter**.
2. Type in the optional names for the buildings or offices served by the system.
3. Access the remaining site-data pages and fill them in appropriately.

Change Cabinet 1 (MCC1 only)

Begin

Return to Task List

If you are not familiar with the fields on the Cabinet Administration form, refer to Cabinet Field Descriptions and Carrier Descriptions,

1. Type **change cabinet 1** and press **Enter**. A screen similar to Cabinet Administration form appears.
2. Fill in the blanks as required by the location and nature of the cabinet. If the system is critical reliability, verify the **B** field is set to the processor option, the **D** field is set to the dup-sw-node option, and the **E** field is set to the switch-node option.

Cabinet Field Descriptions

Field Name	Field Description
Cabinet	Display-only field. This field shows the cabinet number as entered in the command line.
Cabinet Layout	Enter the type of physical carrier layout. Valid entries are **five-carrier** and **single-carrier-stack**. Default is blank.
Cabinet Type	Display-only field. This field shows the type of cabinet being administered. If cabinet **01** is being administered, this field is **processor**. If cabinets **02 through 44** are being administered, this field is **expansion-portnetwork**.
Number of Port Networks	Enter the number of PNs in the cabinet. Valid entries are **1** (default), and **2**.
Survivable Remote EPN	Displays only if the **Cabinet Type** field is “expansion-portnetwork.” If set to **y**, the cabinet has a remote si processor that provides a backup if the links to this cabinet are inoperative.

Cabinet Field Descriptions	
Field Name	**Field Description**
Survivable Remote Processor ID	Displays only if the **Survivable Remote EPN** field is **y**. Enter the product ID assigned to the remote si. This allows DEFINITY Fault Management to know which machine is the backup for this cabinet. The entry in this field cannot be the same as the entry in the **Production Identification** field in the **Maintenance-Related System Parameters** form.
Room	Enter up to ten characters identifying the room where the cabinet is located. Default is blank.
Floor	Enter up to ten characters identifying the floor in the building where the cabinet is located. Default is blank.
Building	Enter up to ten characters identifying the building where the cabinet is located. Default is blank.

Carrier Descriptions	
Carrier Type	Enter the type of carrier in the cabinet being administered. Valid entries are **dup-switch-node**, **expansion-control**, **not-used**, **port**, **processor**, and **switch-node**.
Number	Display-only field. Consists of two fields: the **Designator** and **Number** fields. The **Designator** field contains one of the following entries: **PN** — If the carrier is a port carrier, processor carrier, or unused carrier. **SN** — If the carrier is a switch node carrier, or duplicate switch node carrier. The **Number** field contains either the switch node number or port network number.
Duplicate	The location for the duplicate of a switch node. Only displays when administration of PNC Duplication is enabled. If the **Carrier Type** is **dup-switch-node**, the field displays the three-character carrier address of the duplicate. The first two characters represent the cabinet number; the third character represents the carrier (A through E). This is a display-only field if the **Carrier Type** field is **switch-node**.

Cabinet Administration form

```
                                                              Page 1 of 1
                                    CABINET
CABINET DESCRIPTION
                  Cabinet: 1
           Cabinet Layout: five-carrier_________
             Cabinet Type: processor______________
  Number of Portnetworks: 1
   Survivable Remote EPN: _          Survivable Remote Processor ID: _____
                    Room: ___________
                   Floor: ___________
                Building: ___________
CARRIER DESCRIPTION
  Carrier       Carrier Type         Number     Duplicate
     C         port_____________     PN  01       ___
     B         processor________     PN  01       ___
     A         processor            PN  01       ___
     X         Fan
     D         dup-sw-node______     SN  01       01E
     E         switch-node______     SN  01       01D
```

Return to Task List

Add Cabinet 2 through N (AvayaDEFINITY Server r)

Begin

Return to Task List

1. Type **add cabinet** <***2-44***> and press **Enter**. See Typical Add Cabinet Form.
2. Fill in the blanks as required by the location and nature of the cabinet.

Typical Add Cabinet Form

```
                                                              Page 1 of 1
                                    CABINET
CABINET DESCRIPTION
                  Cabinet: 5
           Cabinet Layout: _____________________
             Cabinet Type: expansion-port network
  Number of Portnetworks: 1
   Survivable Remote EPN: _          Survivable Remote Processor ID: _____
                    Room: ___________
                   Floor: ___________
                Building: ___________
CARRIER DESCRIPTION
  Carrier       Carrier Type         Number     Duplicate
```

Return to Task List

Set Country Options

Begin

Return to Task List

Certain country options need to be set to turn red failure indication LEDs off. Refer to Country Codes for a list of country codes.

1. Type **change system-parameters country options** and press **Enter**.

   A screen similar to Typical System Parameters Country-Options Screen is displayed. The cursor is set on the **Companding Mode** line.

2. If the country uses A-Law companding, type **A-Law** and press **Enter**.

   The default companding mode is mu-Law.

   Other items eventually need to be entered on this screen, but this is all that must be done to turn the red alarm LEDs off.

3. If all red LEDs do not go off, reseat (unplug and reinsert) any *port* circuit packs displaying red LEDs.

CAUTION:
To avoid a disk crash, **never** reseat the DEFINITY AUDIX System without first shutting it down. Shut down the DEFINITY AUDIX System (and allow the disk to completely spin down) before unplugging the assembly. See DEFINITY AUDIX System Power Procedures for the proper procedures.

4. If the red LEDs still do not go off, refer to *Maintenance for Avaya MultiVantage DEFINITY Server SI* or *Maintenance for Avaya MultiVantage DEFINITY Server R.*

Note:
Ignore the red alarm indication LED on the TN767 or TN464/2464 DS1 circuit pack until after the DS1 circuit pack is administered. Alarms will appear in the Alarm Log when power is applied to the system before all equipment connecting to port circuit packs is installed. Normally, some alarms will be logged when power is applied to the system, but should be resolved quickly. If no equipment is connected to the port circuit packs, alarms associated with these ports can take up to four hours to log, but will clear automatically after all equipment is installed and operating correctly.

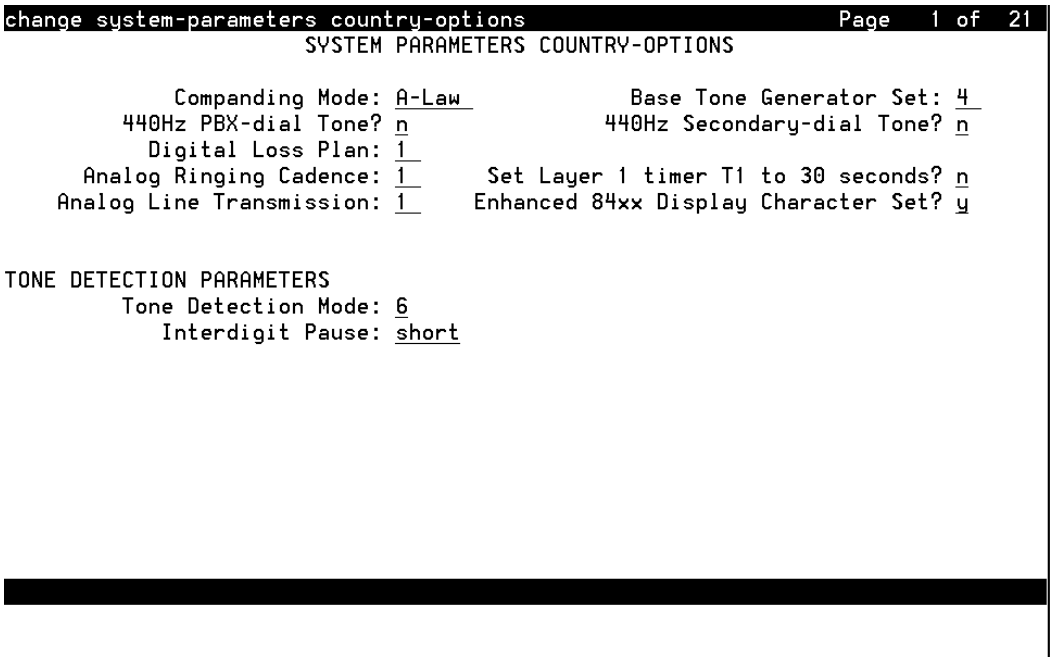
Country Codes

Country	Code	Country	Code
USA	1	Czechoslovakia	14
Australia	2	Russia	15
Japan	3	Argentina	16
Italy	4	Greece	17
Netherlands	5	China	18
Singapore	6	Hong Kong	19
Mexico	7	Thailand	20
Belgium	8	Macedonia	21
Saudi Arabia	9	Poland	22
United Kingdom	10	Brazil	23

Country Codes

Country	Code	Country	Code
Spain	11	Nordic	24
France	12	South Africa	25
Germany	13		

Typical System Parameters Country-Options Screen


change system-parameters country-options Page 1 of 21
SYSTEM PARAMETERS COUNTRY-OPTIONS
Companding Mode: A-Law
Base Tone Generator Set: 4
440Hz PBX-dial Tone? n
440Hz Secondary-dial Tone? n
Digital Loss Plan: 1
Analog Ringing Cadence: 1
Set Layer 1 timer T1 to 30 seconds? n
Analog Line Transmission: 1
Enhanced 84xx Display Character Set? y
TONE DETECTION PARAMETERS
Tone Detection Mode: 6
Interdigit Pause: short

Return to Task List

Change the Password

Begin

Return to Task List

Change the password for the **craft** login to prevent unauthorized administration changes.

Note:
If you are using a **dadmin** login and password, you can skip this procedure or change the **dadmin** password if you want.

CAUTION:
After changing the password, safeguard the new password so no unauthorized administration changes can be made. DO NOT REVEAL this password to any unauthorized person.

Passwords are changed using the **PASSWORD ADMINISTRATION** screen. See Typical Change Password Screen.

1. Verify the screen displays **command:**
2. Type **change password craft** and press **Enter**.

3. Verify the screen displays the **PASSWORD ADMINISTRATION** screen.

   The cursor is positioned on **Password of Login Making Change:**

4. Type the craft default password and press **Enter**.

   The cursor is positioned on **Login's Password**.

5. Enter new password.

   Valid passwords consist of a combination of from 4 to 11 alphanumeric characters. At least one letter and one digit must be used in each password.

6. Press **Enter**. The cursor is positioned on **Reenter Login's Password**:.

7. Type new password again and press **Enter**.

8. Verify the screen displays:

   command successfully completed

Typical Change Password Screen

```
change password craft                                Page   1 of   1   SPE A
                        PASSWORD ADMINISTRATION

   Password of Login Making Change: ___________


   LOGIN BEING CHANGED
                        Login Name: craft

   LOGIN'S PASSWORD INFORMATION
                   Login's Password: ___________
           Reenter Login's Password: ___________
```

Return to Task List

Set Daylight Savings Rules

Begin

Return to Task List

You can set up to 15 customized daylight savings rules. See Typical Daylight Savings Time Rules. If you have switches in several different time zones, you can set up rules for each. A daylight savings time rule specifies the exact time when you want to transition to and from daylight savings time. It also specifies the increment at which to transition.

1. Type **change daylight-savings-rules** and press **Enter**.

2. Type the appropriate start and stop information in the **Change Day**, **Month**, **Date**, **Time**, and **Increment** (for example, **1:00** equals one hour) fields for each rule.

Note:
You can change any rule except rule 0 (zero). You cannot delete a daylight savings rule if it is in use on either the **Locations** or **Date and Time** screens.

3 Press **Enter**.

Typical Daylight Savings Time Rules

```
DAYLIGHT SAVINGS RULES
Rule            Change Day           Month    Date Time    Increment

0:  No Daylight Savings

1:  Start: first Sunday___ on or after April____ 1  at _3:00  01:00
    Stop:  first Sunday___ on or after October_ 25 at _3:00
2:  Start: first Sunday___ on or after April___ 1  at _4:00  01:00
    Stop:  first Sunday___ on or after October_ 25 at _3:00
3:  Start: first _________ on or after ________ __ at __:__
    Stop:  first _________ on or after ________ __ at __:__
4:  Start: first _________ on or after ________ __ at __:__
    Stop:  first _________ on or after ________ __ at __:__
5:  Start: first _________ on or after ________ __ at __:__
    Stop:  first _________ on or after ________ __ at __:__
6:  Start: first _________ on or after ________ __ at __:__
    Stop:  first _________ on or after ________ __ at __:__
7:  Start: first _________ on or after ________ __ at __:__
    Stop:  first _________ on or after ________ __ at __:__
```

Return to Task List

Set Date and Time

Begin

Return to Task List

1 Type **set time** and press **Enter**.

2 Verify the screen displays the **Date and Time** screen. See Typical Date and Time Screen. The cursor is positioned on the **Day of the Week:** field.

3 Type the day of the week in English (Sunday through Saturday) and press **Tab** to move to next field. See English Day of the Week Names for English day of the week names.

4 The cursor is positioned on the **Month:** field. Type the current month in English (January through December). See English Month Names for English month names. After the month is entered, press **Tab** to move to next field.

5 The cursor is positioned on the **Day of the Month:** field. Type the day of month (1 through 31) and press **Tab** to move to the next field.

6 The cursor is positioned on the **Year:** field. Type the current year and press **Tab** to move to the next field.

7 The cursor is positioned on the **Hour:** field. Type the current hour for a 24-hour clock. See Conversion to 24-Hour Clock. Press **Tab** to move to the next field.

8 The cursor is positioned on the **Minute:** field. Type current minute (0 through 59). Seconds cannot be set.

9 Type **standard** or **daylight savings** in the **Type** field.

10 Type the rule (number) in the **Daylight Savings Rule** field.

11 Press **Enter** when the information is correct.

12 Verify the screen displays:

command successfully completed

13 Type **display time**, and press **Enter** to verify date/time data.

Typical Date and Time Screen

```
                          DATE AND TIME
DATE
     Day of the Week: Tuesday    Month: November
    Day of the Month: 3           Year: 1998

TIME
   Hour: 20 Minute: 30 Second: XX Type: standard
          Daylight Savings Rule: 1
```

English Day of the Week Names

Day Number	Day Name
1	Sunday
2	Monday
3	Tuesday
4	Wednesday
5	Thursday
6	Friday
7	Saturday

English Month Names

Month Number	Month Name
1	January
2	February
3	March
4	April
5	May
6	June
7	July
8	August
9	September

English Month Names

Month Number	Month Name
10	October
11	November
12	December

Conversion to 24-Hour Clock

Standard Time		Standard Time	
12-Hour	24-Hour	12-Hour	24-Hour
12:00 midnight	0000	12:00 noon	1200
1:00 am	0100	1:00 pm	1300
2:00 am	0200	2:00 pm	1400
3:00 am	0300	3:00 pm	1500
4:00 am	0400	4:00 pm	1600
5:00 am	0500	5:00 pm	1700
6:00 am	0600	6:00 pm	1800
7:00 am	0700	7:00 pm	1900
8:00 am	0800	8:00 pm	2000
9:00 am	0900	9:00 pm	2100
10:00 am	1000	10:00 pm	2200
11:00 am	1100	11:00 pm	2300

Return to Task List

Reboot High Reliability System (MCC1 only)

Begin

Return to Task List

1. Type **reset system 4** and press **Enter**.
2. Log in as **craft.**

Note:
If you have a **dadmin** login and password, you can use them instead of craft and the craft password.

3. About 8 minutes after booting, type **status spe** and press **Enter**.
4. Verify that **handshake**, **shadowing**, and **refreshed** are all shown to be either **yes** or **on**.

Enable Duplication and Boot Critical Reliability System (Avaya DEFINITY Server r)

Begin

Return to Task List

1. Type **change system-parameters duplication** and press **Enter**.
2. Make sure duplication of both SPE and PNC are enabled on the screen that follows the command. Confirm that **y** is the value in both fields.
3. Type **save translation** and press **Enter**.
4. Type **reset system 4** and press **Enter** to reboot the system.
5. Log in as **craft.**

Note:
If you have a **dadmin** login and password, you can use them instead of craft and the craft password.

6. About 8 minutes after booting the system, type **status spe** and press **Enter**.
7. Verify that **handshake**, **shadowing**, and **refreshed** are all shown to be either **yes** or **on**.

Return to Task List

Administer Attendant Console

Begin

Return to Task List

1. Log in as **craft**.

Note:
If you have a **dadmin** login and password, you can use them instead of craft and the craft password.

2. Type **display system-parameters country-options** and press **Enter** to verify the system's companding mode for its local stations is set to the desired value (usually, A-Law for Europe and mu-Law for North America and Japan).
3. If necessary, type **change terminal-parameters** and press **Enter** to change the default system-level parameters and audio levels for these terminals.
4. Administer other forms for Attendant Console (refer to the *Administrator's Guide for Avaya Communication Manager* for more information).

Return to Task List

Save Translations (Avaya DEFINITY Server si)

Begin

Return to Task List

This command copies the current system translations onto the translation card or removable media. For Standard Reliability systems, one translation card plus one backup is required. For High or Critical Reliability systems, two translation cards plus two backups are required.

CAUTION:
Do not attempt to save translations on the orange-labeled generic program card. Use the white translation card.

The following procedure can be used to save system translations on the original card(s) and can also can be used to make a backup card or cards:

1. Type **save translation** and press **Enter**.
2. Verify a **0** is displayed in the **Error Code** column for each Switch Processing Element (SPE). A **0** indicates the save translation was successfully completed. If a **0** did not appear, the save translation did not complete. Record the error code number and the error message and notify your Avaya representative.
3. Remove the original translation card from the processor circuit pack and replace it with the backup card.
4. Repeat steps 1 through 4 for the backup card.
5. Remove the backup translation card from the processor circuit pack and replace it with the original translation card.
6. Label the backup card with the date and time of the backup. Store the backup card in a secure place.
7. Repeat this process for High or Critical Reliability systems.

Return to Task List

Save Translations (Avaya DEFINITY Server r)

Begin

Return to Task List

This command copies the current system translations onto the translation card or removable media. For standard reliability systems, one removable media for backup is required. For high or critical reliability systems, two removable media for backup are required.

To copy the current system translations onto both disks:

1. Type **save translation** and press **Enter**.
2. Verify the save completes to both disks and returns a result code of “0” (zero).

Add Translations (Avaya DEFINITY Server si)

Begin

Return to Task List

1. To add new terminals, refer to the *Administrator’s Guide for Avaya Communication Manager*.
2. Type **save translations** and press **Enter** to merge these translations with the contents of Flash memory.

Add Translations (Avaya DEFINITY Server r)

Begin

Return to Task List

1. To add new terminals, refer to the *Administrator’s Guide for Avaya Communication Manager*.
2. Type **save translation** and press **Enter** to merge these translations with the contents of the disk.

3 If a standard reliability: type **backup disk incremental**.
or
If a high or critical reliability: type **backup disk incremental both**. Press **Enter**.

Resolve Alarms

Begin

Return to Task List

1 Type **display alarms** and press **Enter**.

Examine the alarm log. Resolve any alarms that may exist using the *Maintenance for Avaya MultiVantage DEFINITY Server* manual.

CAUTION:
To prevent unnecessary trouble tickets, do not enable the system alarms (Alarm Origination feature) until all installation and administration procedures are completed. This section describes basic system start-up procedures only and is not intended to identify all system alarms or error conditions.

Return to Task List

Register the Switch for Maintenance

Begin

Return to Task List

The Automatic Registration Tool (ART) is a web-based tool that permits field technicians and TSO Database Administration (DBA) to register U.S. direct channel products.

The product that you are registering must have switch connectivity through:

- the INADS line
- an IP address

Note:
ART is not accessible from the public internet (outside the Avaya intranet firewall).

1 At your laptop/PC, direct your browser to this URL:

http://spiexp1.eng.avaya.com:8000/cgi-bin/ART/ARTstart.cgi

You can also save this URL in your *Favorites* or *Bookmarks* list.

The ART User Menu displays.

2 Click on the *Register a Product* button.

The Enter Network Password dialog box appears.

3 Type your ART **User Name** and **Password** in the indicated fields.

Note:
ART user IDs and passwords are unique to ART, and are not the same as other user IDs and passwords. If you are a first-time user and do not have an ART user ID and password:

a Go back to the ART User Menu and click on the *Administer My User ID/Password* button.
b Follow the instructions on the User ID and Password page to create your ART user ID and password.

Unless you exit and restart your browser, you do not need to re-enter your user ID and password to perform other ART operations.

The ART Start of Product Registration page appears, and the ART session ID appears in the middle of the screen.

4 Type the Installation Location or Sold-To data in the **FL/Sold-To Number** field.

Note:
Sold-To number replaces the FL numbers as customer-site identifiers in the Maestro database.

- Sold-To numbers are typically 7 digits long, sometimes beginning with an upper-case “S” followed by two zeros, for example: **S001234567**.
- FL numbers are 10-12 letters or digits.

5 In the **Session Type** field, select:

~ *NEW INSTALL REGISTRATION* for products that are initially installed at a customer site.

~ *UPGRADE REGISTRATION* for all subsequent product registrations.

6 In the **Product Type** field choose *DEFINITY* for the following products:

7 Click on the *Start Product Registration* button.

8 If the data you have entered matches a Maestro database record, the Customer Verification page appears.

9 Verify the information in the **Customer Name** and **Customer Address** fields.

If the information is not what you expected, ensure that you entered the customer’s FL/Sold-To number correctly (Step 4 above). If you entered an incorrect number:

a Click on the *Abort Upgrade Registration Session* button at the bottom of the screen.

CAUTION:
DO NOT exit your browser to abort the session. This can result in an incomplete upgrade registration.

b Return to the ART User Menu page to begin a new session.

If the FL/Sold-To number matches multiple customers in the database, ART displays the name and address of each customer with a button to select for this registration session.

10 In the **Customer Type** field, select

~ *GOODYEAR, MOTEL 6, STATE FARM*

~ *IN CINCINNATI BELL SERVICE AREA*

~ *OTHER*

11 Click on the *Continue Upgrade Registration* button.

The DEFINITY Product List page appears.

12 Look in the product table (first column heading is “#”) to find the row for the product that you want to register. Click on the number in the far-left column (“#”) of the correct row.

Note:
It might be helpful to identify the product by looking at the *Product Nickname*, *Product Alarm ID*, *INADS Number*, *Serial Number*, or *IP Address* columns in the table.

If the product is not shown in the table, or if you are not sure whether a listed product is the one you want to register, contact the DBA group for assistance (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2).

Four new fields appear.

13 In the **Data Lock** field, choose:

- ~ *YES* for products with ASG enabled
- ~ *NO* for all others

14 In the **Dialing Type** field choose the dialing type that the product will use to report alarms:

- ~ *DON'T CHANGE* to leave the product's dialing type unchanged
- ~ *TONE* for DTMF dialing
- ~ *PULSE* for rotary or pulse dialing

15 In the **Alarm Origination** field choose:

- ~ *DON'T CHANGE* to leave the product's current alarm origination status unchanged (the common choice for upgrades).
- ~ *YES* to enable alarm origination.
- ~ *NO* for no alarm origination.

16 In the **Alarm Destination** field, choose

- ~ *DON'T CHANGE* to leave the product's currently-administered alarm origination number unchanged (the common choice for upgrades).
- ~ *SET NUMBER TO* and type the complete alarm destination telephone number, including any dialing prefix (for example, "9" or "*9"). The default value in this field is the TSO-Denver number (18005353573).

17 Click on the *Continue Registration* button at the bottom of the page.

ART begins automatically registering the product and displays progress messages to indicate the current status.

CAUTION:
DO NOT exit your browser or click on the *Refresh*, *Back*, *Stop*, or *Home* buttons while ART displays these progress messages.

If you have to abort your registration, click on the **Abort Session** button that appears with one of the progress messages.

If the preceding steps have been completed successfully, ART displays the DEFINITY Upgrade Registration Report.

18 Review the information displayed in the report.

If any of the data are incorrect, contact the DBA Group (1-800-248-1234, selecting prompt, 2, prompt 6, then prompt 2) immediately for assistance.

19 Save the DEFINITY Upgrade Registration Report in a file for future reference or print the report and keep the copy.

Log off the System

Begin

Return to Task List

Type **logoff**.

The **login:** prompt appears on the screen.

Test the System

This section provides tests to:

- review the status of the system
- test the tone-clock, TDM bus, and duplication link in the Processor Port Network (PPN)
- test the expansion interfaces, tone-clock(s), TDM buses, and duplication in the Expansion Port Networks (EPNs).

These tests verify the Time Division Multiplexing (TDM) cables, terminators, and the Inter-Cabinet Cables (ICC). If a **FAIL** Result code is seen or other problems are indicated, check these cables. If problems persist, refer to the *Maintenance for Avaya DEFINITY Server* documentation.

See LED Indicators for information regarding the LED status indicators for the different circuit packs.

Note:
Circuit pack positions are usually given by cabinet, carrier, and slot. They may also be given by port. The term “cabinet” refers either to a stack of SCC1 (Single-Carrier Cabinets) or to an MCC1 (Multi-Carrier Cabinet) making up one port network. A port network is defined as a group of cabinets connected together with one TDM bus.

Task List: Test the System

CAUTION:
To prevent unnecessary trouble tickets, do not enable the system alarms (Alarm Origination feature) until all installation and administration procedures are completed.

1. Check System Status for Each Cabinet
2. Check Circuit Pack Configuration
3. Test Time Division Multiplexing Bus in Processor Port Network
4. Test Tone-Clock Boards
5. Test SPE Duplication Memory Shadowing Link (if duplicated)
6. Test Duplicated Switch Processing Element Interchange (if duplicated)
7. Test Time Division Multiplexing Bus for Each Expansion Port Network
8. Test Tone-Clock for Each Expansion Port Network
9. Test Tone-Clock Interchange for Each Expansion Port Network
10. Test Expansion Interface Exchange for Each Expansion Port Network
11. Check Circuit Pack Configuration
12. Save Translations, if Required

LED Indicators

Refer to the *Maintenance for Avaya MultiVantage™ DEFINITY Server* documentation for detailed alarm and LED descriptions. If a maintenance object begins to fail some periodic tests, the system generates an alarm. The system identifies 3 levels of alarms:

- Major Alarms — Failures that cause critical degradation of service and require immediate attention.
- Minor Alarms — Failures that cause some degradation of service, but do not cause a critical portion of the system to be inoperable. This condition requires action, but its consequences are not immediate. Problems might be impaired service to a few trunks or stations or interfering with one feature across the entire system.
- Warning Alarms — Failures that cause no significant degradation of service or failures in equipment external to the system. Warning alarms are not reported to the attendant console or INADS.

Alarms are communicated to the system users and technicians by entries in the alarm log and the lighting of LEDs located on the attendant console, on all circuit packs, and, optionally, on customer-designated voice terminals.

More detailed information is available here for:

- Attendant Console LEDs
- Terminal Alarm Notification
- Circuit Pack LEDs
- DS1 Converter Circuit Pack LEDs
- SPAN LEDs
- LEDS on Standby Components

Attendant Console LEDs

The console has 2 red LEDs, labeled “ALM” and “ACK”. The ALM LED lights steadily when there is a major or minor alarm at the system cabinet. The ACK LED lights steadily if the alarm has been successfully reported to INADS. If the system is unable to report the alarm to INADS, the LED flashes; this signals the attendant to call INADS and report the alarm.

Terminal Alarm Notification

Terminal Alarm Notification is an optional feature that displays several types of alarms on voice terminals with administered feature buttons or the attendant console. A maximum of 10 digital and/or hybrid voice terminals may be used.

When an alarm occurs, the green status LED associated with the assigned button is in a steady state. The LED may be turned off by pressing the button associated with the LED. If the LED is off and the alarm has not been resolved by the time maintenance reschedules testing, the green status LED resumes its steady state.

Circuit Pack LEDs

Typically, each circuit pack has 3 LEDs on the front panel. The Circuit Pack LEDs table describes the red, green, and yellow LEDs and their meaning. Also see Circuit Pack LEDs on Faceplate.

DS1 Converter Circuit Pack LEDs

Eleven LEDs provide an indication of the state of the TN1654 DS1 Converter Circuit Pack LEDs and the T1/E1 facilities. The top group has the standard red, green and yellow LEDs. The red LED indicates an alarm condition and the green

LED indicates testing in progress. The 4 SPAN LEDs indicate the status of the T1/E1 facilities. The four STATUS LEDs are currently unused and remain off.

The yellow LED is used to indicate the state of the fiber interface, the fiber channel, the control channel, and the communications link to the SPE in the following manner and order of priority. See DS1 Converter Yellow LED Flashing States

SPAN LEDs

The 4 SPAN LEDs indicate the status of the 4 T1/E1 facilities. A SPAN LED is in one of the following states:

1. Solid on yellow: Facility is operational and alarm free.
2. Blinking yellow for 2 seconds, off 0.1 seconds: Facility is operational and alarm free AND is carrying the control channel (facility A or B only).
3. Solid on red: Facility is alarmed.
4. Solid off: Facility is not administered or has been busied out.

LEDS on Standby Components

In high and critical reliability systems, duplicated components on standby usually have the yellow LEDs off, with the following exceptions:

- The major, minor and warning alarm LEDs on the SYSAM circuit pack on the standby SPE do not give reliable indications. Note only LEDs on the active SYSAM circuit pack.
- The yellow LED blinks on and off when the standby processor circuit pack is up and standby maintenance is running.
- In high reliability systems with a Center Stage Switch, (duplicated SPE, simplex PNC), the standby Switch Node clock's yellow LED is off. In critical reliability systems, the standby SNC is located on a separate carrier and normally remains lit.
- Yellow LEDs on power units on standby carriers normally remain lit.

CAUTION:
To prevent unnecessary trouble tickets, do not enable the system alarms (Alarm Origination feature) until all installation and administration procedures are completed.

Circuit Pack LEDs		
LED Color	**Status**	**Description**
Red	Alarm	The system has detected a fault in this circuit pack. The alarm log should contain an on-board alarm. The red LED is also lit briefly when a circuit pack is inserted or reset. If the circuit pack passes its initialization tests, the LED goes out.
Green	Testing	The system is currently running tests on this circuit pack as part of background maintenance or demand testing. This LED is also lit during initialization tests when a circuit pack is inserted or reset.
Yellow	Busy	The circuit pack is currently in use by the system.

Circuit Pack LEDs on Faceplate

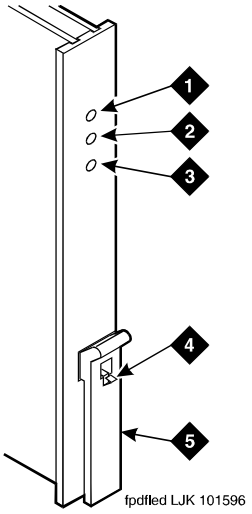


Figure Notes:

[1] Alarm LED (Red)

[2] Test LED (Green)

[3] Busy LED (Yellow)

[4] Latch Pin

[5] Locking Lever

TN1654 DS1 Converter Circuit Pack LEDs

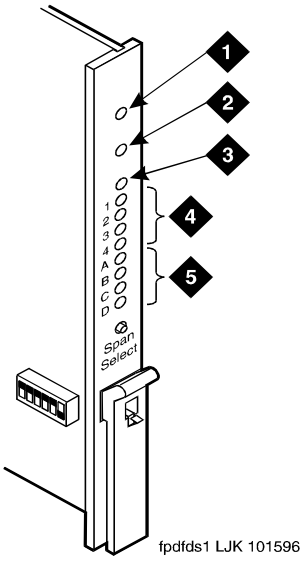


Figure Notes:

[1] Alarm LED (Red)

[2] Test LED (Green)

[3] Busy LED (Yellow)

[4] STATUS LEDs

[5] SPAN LEDs

DS1 Converter Yellow LED Flashing States		
LED on	**LED off**	**Condition**
0.1 second	0.1 second	Fiber out-of-frame or fiber loss of signal
0.5 second	0.5 second	In frame, fiber channel down. The fiber channel communicating between the DS1 Converter and the other fiber endpoint (EI or SNI) is down.
1 second	1 second	In frame, control channel down. The control channel between the 2 DS1 Converters in the DS1 Converter complex is down.
2 seconds	0.2 second	No response from SPE. The SPE is not acknowledging messages from the DS1 Converter or the communications link to the SPE is down.
solid on		DS1 Converter active. This is the normal state for an active DS1 Converter.
	solid off	DS1 Converter standby. This is the normal state for a standby DS1 Converter in critical reliability systems (duplicated PNC).

Check System Status for Each Cabinet

Begin

Return to Task List

The system status may suggest problem areas. Specific tests later provide more specific diagnostic information.

1. If Multi-Carrier Cabinet (MCC1), type **status system *cabinet number <1-44>*** and press **Enter**.
   or
   If Single-Carrier Cabinet (SCC1), type **status system all-cabinets** and press **Enter**.
2. Verify the screen displays system status screens similar to Sample System Status Screen for Cabinet 1 (Page 1 of 3) and to Sample System Status Screen for Cabinet 2 (Page 2 of 3).

   Verify these service states:

Screen page/section	Field	Service State
Page 1, section 1	Tone/Clock	in
Page 1, section 2	TDM	in
Page 1, section 3	EXP-LINK*	in
Page 2, section 1	Tone/Clock	in (for Cabinet 2)
Page 2, section 2	TDM	in (for Cabinet 2)
Page 2, section 3	EXP-LINK*	in (for Cabinet 2)

*The cabinet/carrier/slot numbers for the fiber optic cables are listed. For example, **01A01** in Sample System Status Screen for Cabinet 1 (Page 1 of 3) refers to cabinet stack 01, carrier A, and slot 01.

Sample System Status Screen for Cabinet 1 (Page 1 of 3)

```
status system all-cabinets                                  Page   1 of   3   SPE A
                           SYSTEM STATUS CABINET 1

                      SELECT  SPE ALARMS    TONE/  SERVICE SYSTEM  SYSTEM
 SPE  MODE            SWITCH  MAJOR MINOR   CLOCK  STATE   CLOCK   TONE
 1A   active                  auto 0 0      1A     in      standby standby
 1B   maint/init              auto 0 0      1B     in      active  active

     SERVICE   CONTROL  DEDICATED         SERVICE  BUS ALARMS    BUS   OPEN BUS
TDM  STATE     CHANNEL    TONES      PKT   STATE  MAJOR MINOR   FAULTS  LEADS
 1A    in         y          n       1     in
 1B    in         n          y

 EMERGENCY     SELECT                    SERVICE              CABINET
 TRANSFER      SWITCH      EXP-LINK      STATE     MODE       TYPE
 1A            auto-on     01A01-02A01    in       standby    SCC
 1B            auto-on     01B01-02B02    in       active
```

Sample System Status Screen for Cabinet 2 (Page 2 of 3)

```
status system all-cabinets                                  Page   2 of   3   SPE A
                           SYSTEM STATUS CABINET 2

                  SELECT  SPE ALARMS    TONE/  SERVICE SYSTEM  SYSTEM
 SPE  MODE        SWITCH  MAJOR MINOR   CLOCK  STATE   CLOCK   TONE
 1A   active                auto 0 0      2A     in      active  active
 1B   maint/init            auto 0 0      2B     in      standby standby
     SERVICE  CONTROL  DEDICATED          SERVICE  BUS ALARMS    BUS   OPEN BUS
TDM  STATE    CHANNEL    TONES      PKT   STATE  MAJOR MINOR   FAULTS LEADS
 2A    in         y          n       2
 2B    in         n          y

 EMERGENCY     SELECT                    SERVICE              CABINET
 TRANSFER      SWITCH      EXP-LINK      STATE     MODE       TYPE
 2A            auto-on     01A01-02A01    in       standby    MCC
                           01B01-02B02    in       active
```

Return to Task List

Check Circuit Pack Configuration

Begin

Return to Task List

The list configuration report provides a list of circuit packs connected to the system and recognized by the software.

1. Type **list configuration all** and press **Enter**.
2. Verify the screen displays list configuration similar to Sample System Configuration Screen — Page 1. Make sure the software is communicating with each circuit pack (except power supply circuit packs). Do not attempt to correct any problems until after the diagnostic tests that you run later in the system tests.
3. Note any boards with a **VINTAGE** column entry of **NO BOARD** or **CONFLICT**.

Note:
A **u** indicates unassigned ports, and a number indicates the port has been translated.

Sample System Configuration Screen — Page 1

```
list configuration all                                          Page   1

                          SYSTEM CONFIGURATION

Board                                                  Assigned Ports
Number  Board Type           Code    Vintage  u=unassigned t=tti p=psa

01A01   EXPANSION INTRFC     TN570B  000001
01A03   DID TRUNK            TN459   000004     u  u  u  u  u  u  u  u
01A04   DID TRUNK            TN436   000004     u  u  u  u  u  u  u  u
01A07   TIE TRUNK            TN439   000004     u  u  u  u
01A09   ANNOUNCEMENT         TN750   000007     01 02 03 04 05 06 07 08
                                                  09 10 11 12 13 14 15 16
01B01   EXPANSION INTRFC     TN570   000009
01B02   TONE DETECTOR        TN748D  000002     01 02 03    05 06 07
01B03   DATA LINE            TN726   000012     u  u  u  u  u  u  u  u
01B08   BRI LINE             TN556B  000003     u  u  u  u  u  u  u  u
                                                 u  u  u  u  u  u  u  u
                                                 u  u  u  u  u  u  u  u
01C01   ANALOG LINE          TN746B  000006     u  u  u  u  u  u  u  u
                                                 u  u  u  u  u  u  u  u

                press CANCEL to quit --  press NEXT PAGE to continue
```

Return to Task List

Test Time Division Multiplexing Bus in Processor Port Network

Begin

Return to Task List

1. Type **test tdm port-network 1** and press **Enter**.
2. Verify the screen displays the results of this test. See Sample Test Results for TDM Bus Port Network 1.

3 If the result is **FAIL** for any test, check the connectors of the TDM bus cables in Processor Port Network (PPN) 1.

Sample Test Results for TDM Bus Port Network 1

```
test tdm port-network 1

                                TEST RESULTS

 Port     Maintenance Name  Alt. Name Test No. Result        Error Code

 PN 01A   TDM-BUS                    294      PASS
 PN 01A   TDM-BUS                    296      PASS
 PN 01A   TDM-BUS                    297      ABORT            1005
 PN 01B   TDM-BUS                    294      PASS
 PN 01B   TDM-BUS                    296      ABORT            1005
 PN 01B   TDM-BUS                    297      PASS

Command successfully completed

Command:
```

Return to Task List

Test Tone-Clock Boards

Begin

Return to Task List

Testing the Tone-Clock board also detects problems with the TDM bus cables.

1 Type **test tone-clock 1a** and press **Enter**.

2 Verify page 1 displays the test results similar to Sample Test Results for Tone-Clock 1A.

Sample Test Results for Tone-Clock 1A

```
test tone-clock 1a

                                TEST RESULTS

  Port   Maintenance Name  Alt. Name Test No.      Result     Error Code

  01A       TONE-BD                   46       PASS
  01A       TONE-BD                   52       PASS
  01AXX01   ETR-PT                    42       PASS
  01AXX01   ETR-PT                    43       PASS
  01AXX02   ETR-PT                    42       PASS
  01AXX02   ETR-PT                    43       PASS
  01AXX03   ETR-PT                    42       PASS
  01AXX03   ETR-PT                    43       PASS
  01AXX04   ETR-PT                    42       PASS
  01AXX04   ETR-PT                    43       PASS
  01AXX05   ETR-PT                    42       PASS
  01AXX05   ETR-PT                    43       PASS
  01AXX06   ETR-PT                    42       PASS
  01AXX06   ETR-PT                    43       PASS
```

Return to Task List

Test SPE Duplication Memory Shadowing Link (if duplicated)

Begin

Return to Task List

1. Type **test shadow-link** and press **Enter**.
2. Verify the screen displays test results similar to Example Test Results for SPE Duplication Memory Shadowing Link.

Example Test Results for SPE Duplication Memory Shadowing Link

```
                                TEST RESULTS

Port      Maintenance Name  Alt. Name Test No. Result       Error Code

          SHDW-LNK                    318      PASS

 Command successfully completed
```

Return to Task List

Test Duplicated Switch Processing Element Interchange (if duplicated)

Begin

Return to Task List

1. If Multi-Carrier Cabinet (MCC1), type **status system *cabinet number <1-44>*** and press **Enter**.
   or
   If Single-Carrier Cabinet (SCC1), type **status system all-cabinets** and press **Enter**.
2. Verify the screen displays test results similar to Example System Status Report for All Cabinets.
3. Note the **MODE** of **SPE 1A** and **1B**.
4. Type **refresh spe** and press **Enter**.

   Command successfully completed displays.
5. Type **reset system interchange** and press **Enter**. This causes the terminal to log off.
6. Log in as **craft** again.

Note:
If you have a **dadmin** login and password, you can use them instead of craft and the craft password.

7. Note the **MODE** for **SPE 1A** and **1B** should have changed from that noted in Step 3.

Example System Status Report for All Cabinets

```
status cabinet 1                                                    SPE B
 CABINET CONFIGURATION STATUS                  CABINET CONNECTIVITY STATUS

 Carrier  PN/SN  Carrier          Cabinet    PN/SN         Connectivity Status
 Location Number Type             Type                     Active    Standby

   01A    PN 1   processor        MCC        PN 1          up        up
   01B    PN 1   processor                   SN 1  B-PNC   up
   01C    PN 1   port                        SN 1  A-PNC             up
   01D    SN 1   dup-sw-node
   01E    SN 1   switch-node

   CABINET EMERGENCY TRANSFER                CABINET ALARM STATUS

   Emergency  Select                         PN/SN         Mj     Mn     Wn
   Transfer   Switch
                                             PN 1          0      0      35
     01B      auto-                          SN 1  B-PNC   0      0      0
     01A      auto-                          SN 1  A-PNC   0      0      0


Command:
```

Return to Task List

Test Expansion Interface Circuit Packs

Begin

Return to Task List

Check each Expansion Interface (EI) circuit pack in the system.

1. Type **test board *UUCSS*** where ***UUCSS*** is the cabinet, carrier, and slot for an Expansion Interface (EI) circuit pack in the system, and press **Enter**.

Note:
Labels on the port network and carrier and on the strip under the circuit pack contain this information.

2. Verify the screen displays test results similar to Sample Test Results for Expansion Interface Board 2A01. This example is for board 2a01.
3. If any result is **FAIL**, check the connections for the fiber optic link.
4. Repeat Steps 1 and 2 for each Expansion Interface circuit pack.

Sample Test Results for Expansion Interface Board 2A01

```
                              TEST RESULTS

Port      Maintenance Name  Alt. Name Test No. Result     Error Code

02A01     EXP-INTF                    237      PASS
02A01     EXP-INTF                    238      PASS
02A01     EXP-INTF                    240      PASS
02A01     EXP-INTF                    241      PASS
02A01     EXP-INTF                    244      PASS
02A01     EXP-INTF                    316      PASS
```

Return to Task List

Test Time Division Multiplexing Bus for Each Expansion Port Network

Begin

Return to Task List

Check each TDM bus for each Expansion Port Network (EPN) in the system.

1. Type **test tdm port-network 2** and press **Enter**.
2. Verify a test results screen similar to Sample Test Results for TDM Bus Port Network 2 is displayed.
3. If result is **FAIL** for any test, check the connectors of the TDM bus cables in Processor Port Network (PPN) 2.
4. Repeat these steps for each Expansion Port Network (EPN) to check the TDM bus cables.

Sample Test Results for TDM Bus Port Network 2

```
test tdm port-network 2

                                TEST RESULTS

 Port      Maintenance Name  Alt. Name Test No. Result     Error Code

 PN 02A    TDM-BUS                     294      PASS
 PN 02A    TDM-BUS                     296      PASS
 PN 02A    TDM-BUS                     297      ABORT          1005
 PN 02B    TDM-BUS                     294      PASS
 PN 02B    TDM-BUS                     296      ABORT          1005
 PN 02B    TDM-BUS                     297      PASS


Command successfully completed

Command:
```

Return to Task List

Test Tone-Clock for Each Expansion Port Network

Begin

Return to Task List

1. Type **test tone-clock *2A*** where ***2A*** is the cabinet and carrier number for one of the Tone-Clocks installed, and press **Enter**.

   If any result is **FAIL**, check the associated TDM bus cables and intercabinet cables in the Expansion Port Network (EPN).
2. Repeat Step 1 for each installed Tone-Clock circuit pack.

Test Tone-Clock Interchange for Each Expansion Port Network

Begin

Return to Task List

If the system is critical reliability, test the Tone-Clock interchange for each Expansion Port Network (EPN).

1. If Multi-Carrier Cabinet (MCC1), type **status system *cabinet number <1-44>*** and press **Enter**.
   or
   If Single-Carrier Cabinet (SCC1), type **status system all-cabinets** and press **Enter**.

   This displays the location of the Standby Tone-Clock.
2. Type **set tone-clock *xx*** where ***xx*** is the Port-Network/Carrier for the Standby Tone-Clock. Press **Enter**.
3. If Multi-Carrier Cabinet (MCC1), type **status system *cabinet number <1-44>*** and press **Enter**.
   or
   If Single-Carrier Cabinet (SCC1), type **status system all-cabinets** and press **Enter**.
4. Verify the duplicated Tone-Clock is active using the information displayed on the screen.

If any problems are indicated, check the TDM cables in the associated Expansion Port Network (EPN).

Return to Task List

Test Expansion Interface Exchange for Each Expansion Port Network

Begin

Return to Task List

If the system is critical reliability, test the expansion interface exchange for each Expansion Port Network (EPN).

1. If Multi-Carrier Cabinet (MCC1), type **status system *cabinet number <1-44>*** and press **Enter**.
   or
   If Single-Carrier Cabinet (SCC1), type **status system all-cabinets** and press **Enter**.

   This displays the standby expansion link. See Sample of System Status before Expansion Link is Set.
2. Type **set expansion-link *UUCSS*** where ***UUCSS*** is one of the cabinet, carrier, and port locations of the standby expansion link.
3. Verify the bottom of the screen displays:

   Command successfully completed

   Command:
4. If Multi-Carrier Cabinet (MCC1), type **status system *cabinet number <1-44>*** and press **Enter**.
   or
   If Single-Carrier Cabinet (SCC1), type **status system all-cabinets** and press **Enter**.

   A screen similar to Sample of System Status after Expansion Link is Set is displayed.
5. Verify the **MODE**s of the expansion links have changed.
6. If any problems are indicated, check the TDM cables and the inter-cabinet cables (ICC) in the associated Expansion Port Network (EPN).

Sample of System Status before Expansion Link is Set

```
status system all-cabinets
                          SYSTEM STATUS CABINET 1

EMERGENCY     SELECT                    SERVICE             CABINET
TRANSFER      SWITCH      EXP-LINK      STATE     MODE      TYPE
1A            unavail     01A01-02A01    in       standby   ESCC
1B            auto-on     01B01-02B02    in       active
                               -
                               -



Command successfully completed

Command:
```

Sample of System Status after Expansion Link is Set

```
status system all-cabinets
                          SYSTEM STATUS CABINET 1

EMERGENCY     SELECT                    SERVICE             CABINET
TRANSFER      SWITCH      EXP-LINK      STATE     MODE      TYPE
1A            auto-on     01A01-02A01    in       active    ESCC
1B            auto-on     01B01-02B02    in       standby



Command successfully completed

Command:
```

Return to Task List

Check Circuit Pack Configuration

Begin

Return to Task List

1. Type **list configuration all** and press **Enter**.
2. Verify all circuit packs are listed in the reports.

   Refer to the *Maintenance for Avaya MultiVantage™ DEFINITY Server* documentation to resolve any discrepancies.

Save Translations, if Required

Begin

Return to Task List

If any administration changes have been made, save and make a back up copy of the translations.

Install and Wire Telephones

The wiring procedures are the same for most of the Avaya Media Gateway telephones and other equipment.

This task list provides wiring examples of similar installation procedures. These are examples only; actual wiring procedures may vary at each site.

After installing the hardware, the data for telephone features must be administered. These procedures are provided in the *Administrator's Guide for Avaya Communication Manager*.

Note:
Refer to *Installation for Adjuncts and Peripherals for Avaya Communication Manager* to install the necessary peripheral equipment.

Task List: Wiring Examples and Wiring Procedures

- Voice and Data Terminals
- Analog Tie Trunk Example
- Digital Tie Trunk Example
- DS1 Tie Trunk Example
- Auxiliary Connector Outputs
- Three-Pair and Four-Pair Modularity
- Adjunct Power Connection Locations
- Attendant Console Example
- Connect External Alarm Indicators and Auxiliary Power
- Connect Power Distribution Unit External Alarm Wires
- Remote Network Interface
- Off-Premises or Out-of-Building Stations
- Emergency Transfer Units and Associated Telephones
- 808A Emergency Transfer Panel and Telephone Installation Examples
- Install External Ringing
- Install the Queue Warning Indicator

These links provide useful reference information:

- Voice and Data Terminals
- Circuit Pack and Auxiliary Equipment Classifications
- Connector and Cable Diagrams (Pinout Charts)

Voice and Data Terminals

Return to Task List

The Avaya Media Gateway can be connected to all DTE terminals that have RS-232 (or EIA-232) or DCP interfaces. Terminals include:

- Connectable Voice and Data Terminals
- Connectable Administration Terminals

Task List: Connect Voice and Data Terminals

- Connect a Typical Telephone
- Connect Adjunct Power
- Connect an Analog Station or 2-Wire Digital Station

Connectable Voice and Data Terminals

These voice and data terminals can connect to an Avaya Media Gateway.

Voice and Data Terminals	
Terminal Model	**Type**
Multi-button Electronic Telephone (MET) sets: 10, 20, 30 Button	Voice
Analog: 500, 2500/2554, 2500 DMGC, 2500YMGK, S203A Speakerphone	Analog voice
46xx series: 4602, 4602SW, 4606, 4612, 4620, 4620SW, 4624, 4630, 4630SW	Internet Protocol (IP)
71XXX series: 7101A, 7102A, 7103A, 7104A	Analog voice
73XXX series: 7302H, 7303H, 7303S, 7305S, 7305H	Hybrid voice
74XXD series: 7401D, 7403D, 7404D, 7405D, 7406D, 7407D, 7410D, 7434D, 7444	Digital voice
81XX series: 8102, 8110 91XX series: 9101, 9103, 9110	Analog voice
64XX series 6402, 6402D, 6408/D/+/D+, 6416D+, 6424D+, XM24 84XX series: 8403B, 8405B/D/B+/D+, 8410B/D, 8411B/D, 8412, 8434, 8435 94XX series: 9403, 9410, 9434	Digital voice
Basic Rate Interface (BRI) (75XX series): 7505-VOM/T, 7506-VOM/T, 7507-VOM/T 85XX series: 8503, 8510, 8520	BRI voice

Voice and Data Terminals	
Terminal Model	**Type**
Workstation series Business Communications Terminals (BCTs) and Business Communications Systems (BCS): 510D BCT, 513 BCT, 515 BCT, 615 BCT, 715 BCT, 715 BCS PC/PBX platform (digital): PC/ISDN platform (BRI)	Data
Consoles: 301A Attendant Console, 302A1 Enhanced Generic 1 Console 602A1 ACD Console (CallMaster® digital communications terminal)	Data and voice
ZE01A Expansion Module for 8434Dx	Voice and Features
Cordless Hybrid: MDW 9000 (TransTalk 9000) MDC 900	Voice
DCP Data interface: Constellation Automatic Call Distribution (ACD) data terminal	Data and voice
PassageWay interface: Consoles: 302B1, 302C1 Attendant Console 603A/D Automatic Call Distribution (ACD) Console (CallMaster digital console) 603E Automatic Call Distribution (ACD) Console (CallMaster digital console)	Data and voice

Connectable Administration Terminals

These administration terminals can connect to a Avaya Media Gateway.

Administration Terminals	
Administration Terminal	**Application**
510D	Remote administration
610D, 513, 610, 615, 715* Business Communications Terminal (BCT), 4410, 4425, and VT220	Management Terminal: administration and general purpose
515 Business Communications Terminal (BCT)	Remote administration, general purpose
615 Management Terminal	Management Terminal system administration and maintenance terminal
715 BCS and 715 BCS-2 Management Terminal	Management Terminal system administration and maintenance terminal

*The keyboards and terminals are interchangeable when an adapter cable is used.

Note:
The older version of 715 BCT (the 715 Business Communications System [BCS]) (406803148 and 406803155), has a 6-pin mini-DIN keyboard connector.

The new version of 715 BCT (the 715 BCS) (4073113881 and 407313899), has a 6-pin RJ-11 keyboard jack located on the side of the terminal

Connect a Typical Telephone

Begin

Return to Task List

The 302C1 Attendant Console is used to describe a typical telephone connection. This information is typical of the 603E, 84xx (4-wire), and 94xx telephones.

The attendant console always requires auxiliary (adjunct) power (-48 VDC). Power is connected to the console through Pins 7 and 8 of the information outlet. Only three consoles can be powered by the system through the AUX connector. When possible, the primary console should be powered from the system so it has the same power failure backup as the system.

The maximum cabling distance for the console powered from the cabinet is 350 feet (100 meters).

The general steps to connect a telephone are:

1. Choose a device to connect such as a 302C1 Attendant Console.
2. Choose the port circuit pack and its carrier and slot number, such as cabinet 1, carrier C, slot 02.
3. Choose a port circuit on the port circuit pack, such as Port 05.
4. Install cross-connect jumpers to wire the terminal to the port circuit pack. See 302C1 to 4-wire DCP Wiring. This pinout is for the 4-wire Digital Line circuit pack.

CAUTION:
Do not use the 329A power unit for the attendant console. Use an 1151A1, 1151A2, 1145A, or MSP-1 power unit.

5. For terminals needing adjunct power, wire -48 VDC and ground to appropriate pins on the terminal. See 302C1 to 4-wire DCP Wiring.

302C1 to 4-wire DCP Wiring

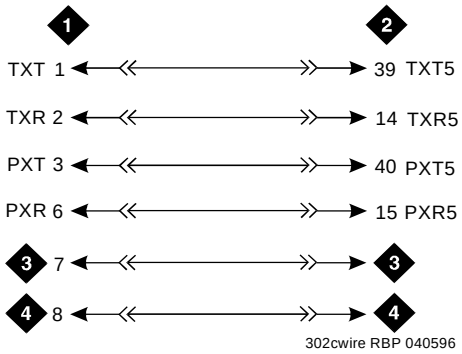


Figure Notes:

[1] 302C1 Attendant Console

[2] 4-wire Digital Line Circuit Pack (Position 1C02)

[3] -48 VDC From Adjunct Power

[4] Ground From Adjunct Power

Return to Task List

Connect Adjunct Power

Begin

Return to Task List

The 400B2 adapter is convenient for connecting local -48 VDC power to a modular plug. See 400B2 Adapter Connecting to a Modular Plug.

Each port network can provide power for up to three attendant consoles. This source of power is preferred for the attendant consoles because it has the same battery backup as the system. See Auxiliary Connector Outputs.

Note:
Adjunct power can be provided locally at the telephone or console by either the 1151A1 or 1151A2 power supply. Adjunct power can be provided from the equipment room or equipment closet with the 1145B power unit. Go to Install and Wire Telephone Power Supply for power supply information and installation procedures.

400B2 Adapter Connecting to a Modular Plug

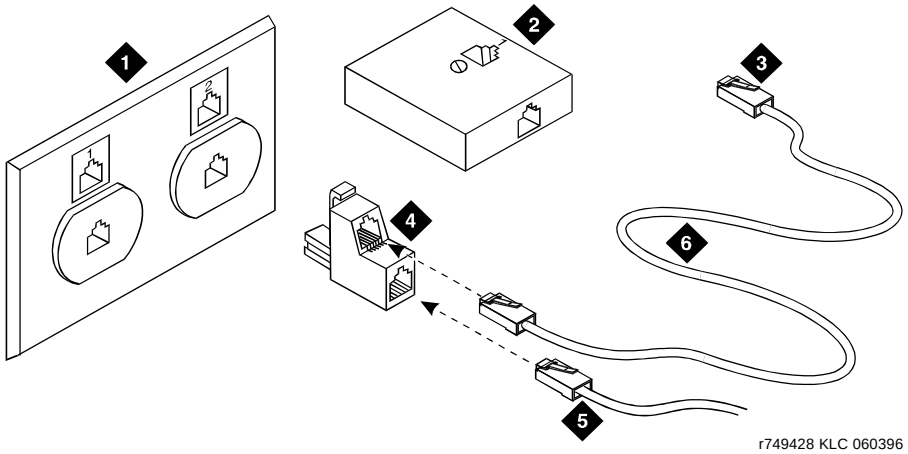


Figure Notes:

[1] Flush-Mounted Information Outlet

[2] Surface-Mounted Information Outlet

[3] To Individual Power Unit

[4] 400B2 Adapter

[5] To Telephone

[6] Destination Service Access Point (DSAP) Power Cord

Return to Task List

Connect an Analog Station or 2-Wire Digital Station

Begin

Return to Task List

This example is typical of the 2-wire digital stations (603E, 84xx, 94xx, 302C1), 2-wire analog stations (500, 2500, 71xx), analog Central Office (CO) trunks, Direct Inward Dial (DID) trunks, and external alarms. See 2500-Type Analog Telephone Wiring.

1. Choose a peripheral to connect (such as a 2-wire digital station).
2. Choose the port circuit pack to use and its carrier and slot number (from Port Circuit Pack and Telephone Pin Designations). For example: TN2183 Analog Line, Cabinet 1, Carrier C, Slot 1.
3. Choose a port circuit on the port circuit pack, for example port 3.
4. Install cross-connect jumpers to connect the pins from the 2-wire digital station to the appropriate pins on the port circuit pack.
5. Administer using *Administrator's Guide for Avaya Communication Manager*.

2500-Type Analog Telephone Wiring

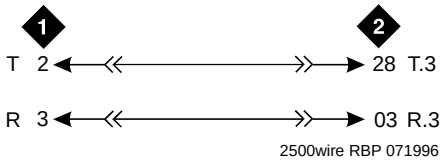


Figure Notes:

[1] 2500-Type Analog Station

[2] TN2183 Analog Line Circuit Pack, Position 1C01

Port Circuit Pack and Telephone Pin Designations

Pin on Modular Plug	4-wire; 302C1, 8400-Series, 603E, 9403, 9434	2-wire; 302C1, 8400-Series, 603E, 9403, 9410, 9434	8510T Basic Rate Interface (BRI) (with adjunct speaker phone)	Analog Station, Modem	NT1	Z3A1 & Z3A2 Asynchronous Data Units (ADU), Data Module
1	TXT					TXT
2	TXR			T		TXR
3	PXT		TXT	R		PXT
4		T	PXR		T	

Port Circuit Pack and Telephone Pin Designations

5		R	PXT	No Connection 4-pin modular jack	R	
6	PXR		TXR			PXR
7	-48VDC	(-48VDC)	(-48VDC)		-48VDC	
8	GRD	GRD	GRD		GRD	
Circuit Pack	TN754 4-wire digital (8 port)	TN2181 2-wire digital (16 port) TN2224 2-wire digital (24 port)	TN556 ISDN-BRI Line	TN2183 Analog line (16 port)	TN2198 2-wire Basic Rate Interface line	TN726 Data Line

PX PBX transmitT Tip (A)
TX Terminal transmitRRing(B)

Return to Task List

Analog Tie Trunk Example

Return to Task List

This example shows how to connect analog tie trunk wiring from one DEFINITY System to another DEFINITY System.

1. Set the option switches on the port circuit pack (such as TN760).

   Go to Option Switch Settings for detailed information.

2. Install cross-connect jumpers to connect the pins from the tie trunk circuit pack to the appropriate leads on the external tie trunk.

   Analog Tie Trunk Wiring shows a DEFINITY System tie trunk connected to a DEFINITY System tie trunk. Names of the tie trunk leads must be determined from the manufacturer or supplier of the external trunk circuit.

3. Administer on the Trunk Group Screen of the management terminal. Refer to the *Administrator's Guide for Avaya Communication Manager* for more details.

Analog Tie Trunk Wiring

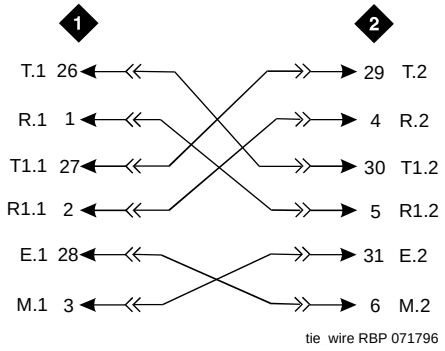


Figure Notes:

[1] External Trunk or Adapter

[2] Tie Trunk Circuit Pack (Position 1C05)

Return to Task List

Digital Tie Trunk Example

Return to Task List

This example shows how to connect digital tie trunk wiring from one DEFINITY System to another DEFINITY System. Digital Tie Trunk Wiring shows the connections.

1. Install cross-connect jumpers to connect the pins from the digital trunk circuit pack to appropriate pins on the manufacturer's or supplier's external digital trunk.
2. Set option switches on the port circuit pack (Digital Trunk).

   Go to Option Switch Settings for detailed information.
3. Administer on the DS1 and Trunk Group Screens of the management terminal. Refer to the *Administrator's Guide for Avaya Communication Manager* for more details.

Digital Tie Trunk Wiring

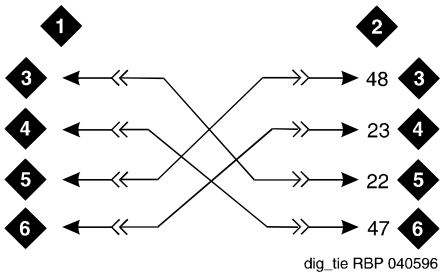


Figure Notes:

[1] External Trunk

[2] Digital Trunk Circuit Pack, Position 1C06

[3] LO

[4] LO (Balanced Output Pair)

[5] LI

[6] LI (Balanced Input Pair)

Return to Task List

DS1 Tie Trunk Example

Return to Task List

Digital Signal Level 1 (DS1) tie trunks provide a 1.544 Mbps (T1) or 2.048 Mbps (E1) digital data service between two collocated systems or between the system and a data network.

See these examples:

- Collocated DS1 Tie Trunks
- DS1 Tie Trunks Using T1 Channel Service Unit

For cable descriptions, see

- DS1 Cables
- Pinout of C6F Cable

Collocated DS1 Tie Trunks

Two DS1 tie trunk circuit packs can be in collocated systems. A DS1 Tie Trunk circuit pack in one system can be connected to a DS1 in another system. A C6D cable can be used if the distance is less than 50 feet (15.2 m). If the distance is between 50 feet (15.2 m) and 1310 feet (399 m), use a C6E cable.

Note:
The maximum distance between cabinets is 1310 feet (399.3 m).

DS1 Tie Trunks Using T1 Channel Service Unit

The T1 Channel Service Unit (CSU) interfaces the DS1 tie trunks with the 1.544 Mbps digital facility.

Connect the DS1 tie trunk to a T1 CSU. See Typical Connections to Channel Service Unit.

Note:
A 3150 CSU is shown, a 120A Integrated CSU (ICSU) may be used.

Contact your Avaya representative for maximum cabling distances for the 31xx series CSU or the 120A ICSU.

Typical Connections to Channel Service Unit

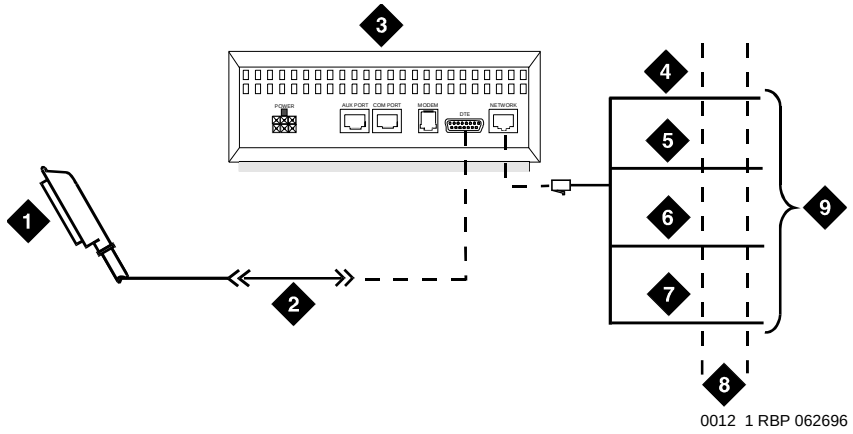


Figure Notes:

[1] Connector to DS1 Interface Circuit Pack

[2] C6C Cable (For Distances Over 50 Feet (15.24 m), Use C6E Cable(s))

[3] T1 Channel Service Unit (CSU) 3150 Shown

[4] T (Tip)

[5] R (Ring)

[6] T1 (Tip 1)

[7] R1 (Ring 1)

[8] 1.544 Mbps Digital Service Interface

[9] To T1 Carrier

DS1 Cables	
Connector Cable	**Description and Usage**
C6C connector cable	50-foot (15.2 m) shielded cable equipped with a 50-pin male connector on one end and a 15-pin male connector on the other end. Use this cable to connect a DS1 tie trunk circuit pack to a Channel Service Unit (CSU).
C6D connector cable	50-foot (15.2 m) shielded cable equipped with a 50-pin male connector on each end. Use this cable to connect a DS1 tie trunks in collocated cabinets.
C6E connector cable	100-foot (30.5 m) shielded cable equipped with a 50-pin male connector on one end and a 50-pin female connector on the other end. Use this cable as an “extension” cable between the DS1 tie trunk circuit pack and other connector cables.
C6F connector cable	50-foot (15.2 m) shielded cable equipped with a 50-pin male connector on one end and a three inch (7.62 cm) stub on the other end. Use this cable to connect the DS1 tie trunk circuit pack to channel multiplexers requiring hardwired connections.

Pinout of C6F Cable		
Wire Color	**Lead Designation**	**Pin Number**
White/Green	LI* (High Side)	47
Green	LI	22
White/Brown	LO	48
Brown	LO* (High Side)	23
White/Slate	LBACK2	49
Slate	LBACK1	24

Return to Task List

Auxiliary Connector Outputs

Return to Task List

Connect a 25-pair cable from the **AUX** connector on the back of the control carrier to a connecting block on the trunk/auxiliary field.

Auxiliary Lead Appearances at AUX Connector shows the Control Carrier outputs cable pinouts. The Control Carrier **AUX** connector outputs include:

- Alarm monitoring for the auxiliary cabinet
- Seven -48 VDC power sources for emergency transfer units
- Three -48 VDC power sources for remotely powering three attendant consoles or telephone adjuncts
- The remote management terminal interface trunk connection location
- A relay contact that actuates a customer-supplied light, bell, or similar device. The relay can activate when a major, minor, or warning condition occurs. The device connected to the alarm leads must not exceed a rating of 30 VAC rms or 60 VDC at 0l75 amps.

  Auxiliary Lead Appearances at AUX Connector shows the pinouts for an external alarm.

Port Circuit Pack and Telephone Pin Designations provides port circuit pack and telephone pin designations.

Auxiliary Lead Appearances at AUX Connector

Color[1]	Pinouts	Output	Power
W-BL BL-W	26 1	Major*	
W-O O-W	27 2	Minor*	
W-G G-W	28 3	GRD	
W-BR BR-W	29 4	GRD	
W-S S-W	30 5	GRD	
R-BL BL-R	31 6	GRD	
R-O O-R	32 7	GRD	
R-G G-R	33 8	Not Connected	
R-BR BR-R	34 9	Not Connected	
R-S S-R	35 10	Not Connected	

Auxiliary Lead Appearances at AUX Connector

Color[1]	Pinouts	Output	Power
BK-BL BL-BK	36 11	-48 GND	Emergency Transfer Relay Power
BK-O O-BK	37 12	-48 GND	
BK-G G-BK	38 13	-48 GND	
BK-BR BR-BK	39 14	-48 GND	
BK-S S-BK	40 15	-48 GND	
Y-BL BL-Y	41 16	-48 GND	
Y-O O-Y	42 17	-48 GND	
Y-G G-Y	43 18	Not Connected	
Y-BR BR-Y	44 19	GND -48	AUX Power
Y-S S-Y	45 20	GND -48	
V-BL BL-V	46 21	GND -48	
V-O O-V	47 22	Not Connected	
V-G G-V	48 23	Ext Alarm A** Ext Alarm Return	
V-BR BR-V	49 24	Not Connected	
V-S S-V	50 25	INADS Tip INADS Ring	

1.Color designation is the main wire color and the color of the stripe on the wire.
The following wire colors apply:
W-White
BL-Blue
O-Orange
G-Green
BR-Brown
S-Slate (Grey)
R-Red
BK-Black
Y-Yellow
V-Violet

* External alarm with signal incoming to system.
** External alarm with signal outgoing from system.

Port Circuit Pack and Telephone Pin Designations

Pin on Modular Plug	4-wire; 302C1, 8400-Series, 603E, 9403, 9434	2-wire; 302C1, 8400-Series, 603E, 9403, 9410, 9434	8510T Basic Rate Interface (BRI) (with adjunct speaker phone)	Analog Station, Modem	NT1	Z3A1 & Z3A2 Asynchronous Data Units (ADU), Data Module
1	TXT					TXT
2	TXR			T		TXR
3	PXT		TXT	R		PXT
4		T	PXR		T	
5		R	PXT	No Connection 4-pin modular jack	R	
6	PXR		TXR			PXR
7	-48VDC	(-48VDC)	(-48VDC)		-48VDC	
8	GRD	GRD	GRD		GRD	
Circuit Pack	TN754 4-wire digital (8 port)	TN2181 2-wire digital (16 port) TN2224 2-wire digital (24 port)	TN556 ISDN-BRI Line	TN2183 Analog line (16 port)	TN2198 2-wire Basic Rate Interface line	TN726 Data Line

PX PBX transmitT Tip (A)
TX Terminal transmitRRing(B)

Return to Task List

Three-Pair and Four-Pair Modularity

Return to Task List

3-Pair and 4-Pair Modularity is from the port circuit pack to the voice or data terminal. Refer to Install Telecommunications Cabling for descriptions of 3- and 4-pair modularity and distribution.

Most terminals connect to an information outlet (modular jack) installed at the work location. Make the connections from the port circuit pack to the modular jacks, as shown in 3-Pair and 4-Pair Modularity. Then, plug the terminal into the modular jack.

Adjunct Power Connection Locations shows three methods of connecting adjunct power.

3-Pair and 4-Pair Modularity

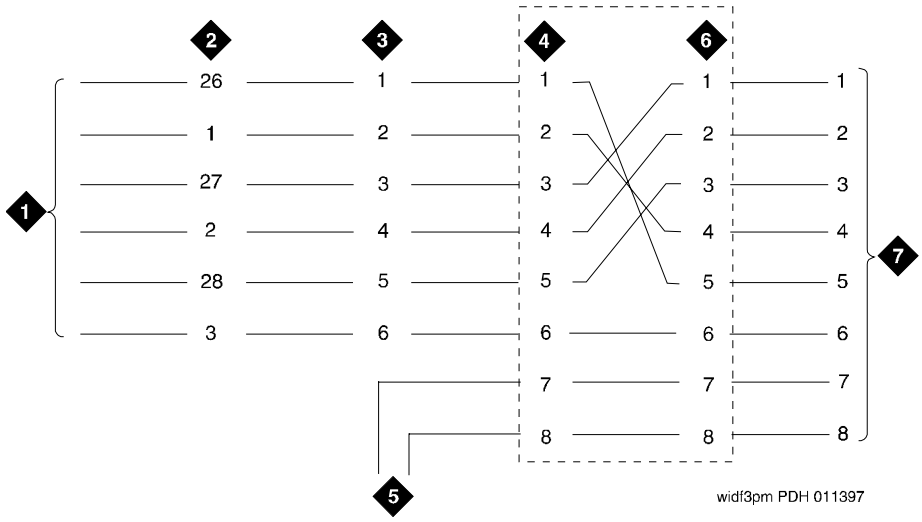


Figure Notes:

[1] Port Circuit Pack

[2] System Cabinet Connector Pins (3-Pair Modularity)

[3] Main Distribution Frame (MDF) Pins (3-Pair Modularity)

[4] Input to Information Outlet (4-Pair Modularity)

[5] Adjunct Power

[6] Output From Information Outlet (4-Pair Modularity)

[7] Voice or Data Terminal Pins

Return to Task List

Adjunct Power Connection Locations

Return to Task List

Example Adjunct Power Connections shows typical connection locations for adjunct power. Adjunct power for station equipment may be supplied from the equipment room, satellite location, or the work location.

For this figure, the following example is used:

1. If 25 telephones are connected to the system and all 25 telephones need adjunct power, install a bulk power supply in the equipment room.
2. If only ten of the telephones need adjunct power, install a bulk power supply at the satellite location.
3. If only one telephone needs adjunct power, install the individual power supply at the work location.

Example Adjunct Power Connections

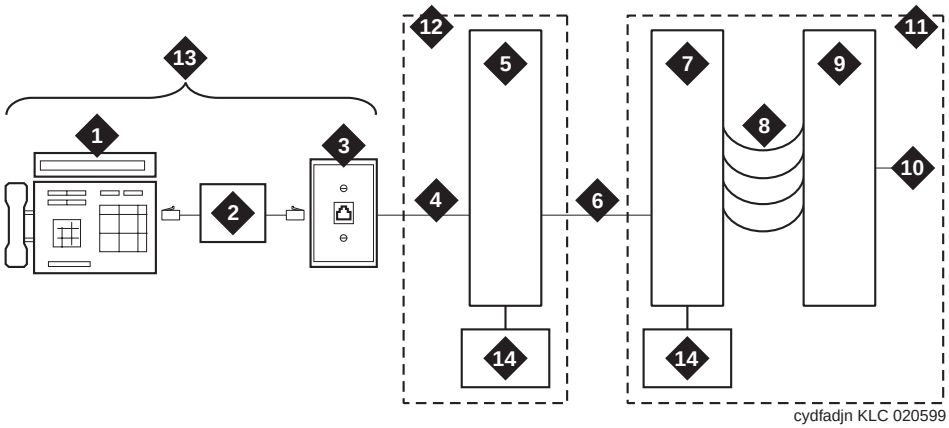


Figure Notes:

[1] Typical Display Telephone

[2] Individual Power Supply (Such as 1151A1 or 1151A2)

[3] Information Outlet (Modular Jack)

[4] 4-Pair D-Inside Wire (DIW) Cable

[5] Satellite Site or Adapter Location

[6] 25-Pair D-Inside Wire (DIW) Cable

[7] Station Side of Main Distribution Frame (MDF)

[8] 100P6A Patch Cord or Jumpers

[9] System Side of Main Distribution Frame (MDF)

[10]25-Pair Cable to System Cabinet (Analog Line Circuit Pack)

[11]Equipment Room

[12]Satellite Location

[13]Work Location

[14]Bulk Power Supply (Such as 1145B)

Powering IP phones

If customers do not want to use local power for their IP phones, they can use either the

- P333T-PWR 24-port Cajun switch that provides power over the Ethernet.
- 1152A1 midspan power unit, which supplies power between the Avaya Media Gateway or Server and IP phones. This power unit also works with the X330 Ethernet expansion module.

Return to Task List

Attendant Console Example

Return to Task List

These links provide specific information:

- Attendant Console Cabling Distances, Local and Phantom Power
- Auxiliary Power

- Hard-Wire Bridging
- Dual Wiring of Two-Wire and Four-Wire Endpoints

Task List: Attendant Console Procedures

- Install the Attendant Console
- Install the 26B1 Selector Console

Attendant Console Cabling Distances, Local and Phantom Power

The maximum distance from the system for the 302C1 (hardwired) consoles is shown in Attendant Console Cabling Distances.

Note:
IP Softconsole installations are not subject to these distance limitations.

Attendant Console Cabling Distances

Enhanced Attendant Console (302C1)	24 AWG Wire (0.5106 mm^2)		26 AWG Wire (0.4049 mm^2)	
	Feet	Meters	Feet	Meters
With Selector Console				
Phantom powered	800	244	500	152
Locally powered	5000	1524	3400	1037
Without Selector Console				
Phantom powered	1400	427	900	274
Locally powered	5000	1524	3400	1037

Auxiliary Power

CAUTION:
Do not use the 329A power unit for the attendant console.

The nonessential functions of an attendant console and its optional 26A1 or 24A1 selector console derive their power from an auxiliary power source. Of the maximum of 27 attendant consoles, 3 of the consoles can derive auxiliary power from the system and through the auxiliary cable located in the trunk/auxiliary field. Provide auxiliary power for a primary attendant console through this cable so the console remains fully operational during short power outages.

Note:
For a console to realize the longest possible nominal battery holdover of 10 minutes, the console's TN754B or TN413 Digital Line circuit pack should reside in an EPN's duplicated control cabinet.

An attendant console can also derive auxiliary power from:

- Individual 1151A1 or 1151A2 power supply
- 258A-type adapters
- Bulk power supplies such as the 1145B

A console's maximum distance from its auxiliary power source is:

- 800 feet (244 m) for a 302A1

- 350 feet (106.8 m) for a 301B1 and 302C1

Hard-Wire Bridging

Analog type hard-wire bridging is not allowed for four-wire (only) DCP endpoints. Hard-wire bridging provides no way of combining the digital output of two bridged DCP sets. Also, a bridged endpoint causes degradation of the DCP signal.

CAUTION:
Bridging or paralleling these endpoints can cause electrical damage to the consoles or cause the circuit pack to remove power from the consoles.

Dual Wiring of Two-Wire and Four-Wire Endpoints

Do not simultaneously wire a two-wire and four-wire endpoint to the same equipment location in an MDF. The Avaya Media Server or Gateway uses separate circuit packs to interface two- and four-wire endpoints.

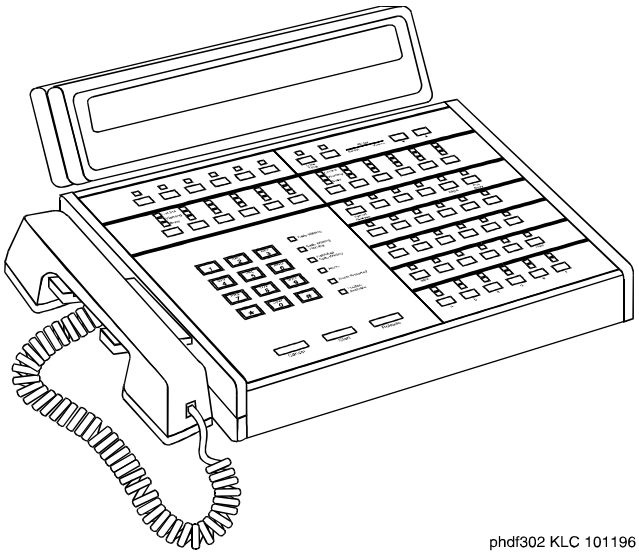
Install the Attendant Console

Begin

Return to Task List

1. Install the Attendant Console and connect the modular cord to the information outlet.
2. Install labels per the Attendant Console form and the Display Module form assignments.
3. Install a Digital Line circuit pack in the assigned carrier slot (if an additional circuit pack is required).
4. Administer the forms listed in “Attendant Console” in *Administrator’s Guide for Avaya Communication Manager*.

302C1 Console



phdf302 KLC 101196

Return to Task List

Install the 26B1 Selector Console

Begin

Return to Task List

1. Connect the supplied 3-foot (0.9 m) D8AC cable to the modular jack on the bottom of the 26B1 Selector Console.
2. Route the cable to the attendant console and connect to the DXS/BLF jack.
3. Attach labels according to the Attendant Console form.
4. Administer the console using *Administrator's Guide for Avaya Communication Manager*.

Return to Task List

Connect External Alarm Indicators and Auxiliary Power

Begin

Return to Task List

Alarms can be generated on adjunct equipment, sent to the DEFINITY System, and recorded and reported as "external alarms." A typical major alarm *input* is from an Uninterruptible Power Supply (UPS).

The system provides a relay contact that can operate a customer-provided alarm, such as a light or bell. The circuitry and power source are customer- provided. The alarm device must not exceed a rating of more than 100 Volts at 0.75 Amp.

1. Connect 1 major and 1 minor alarm *input* pair to the trunk/auxiliary field from the AUX connector. See Alarm Inputs at AUX Connector.
2. Connect an external alarm *output* through pins 48 and 23 of the AUX connector. See Alarm Output at AUX Connector.
3. Note which device connects to which alarm and give this information to your Avaya representative for troubleshooting purposes.
4. Connect emergency transfer power and auxiliary power as shown in Emergency Transfer and Auxiliary Power. Auxiliary power includes power to an attendant console or adjunct device.

Alarm Inputs at AUX Connector

Color	AUX Connector
White-Blue	AP1 (Pin 26) Major Alarm Input
Blue-White	Ground (Pin 1)
White-Orange	AP2 (Pin 27) Minor Alarm Input
Orange-White	Ground (Pin 2)

Alarm Output at AUX Connector

Color	AUX Connector
Violet-Green	EXTALMA (Pin 48) Alarm Output
Green-Violet	EXTALMB (Pin 23) (Ground) Alarm Output

Emergency Transfer and Auxiliary Power

Color	AUX Connector
Black-Green	XFER48 (Emergency Transfer) (Pin 36)
Green-Black	Ground (Pin 11)
Black-Slate	ACC48A (Adjunct -48 VDC) (Pin 19)
Slate-Black	Ground (Pin 44)

Return to Task List

Connect Power Distribution Unit External Alarm Wires

Begin

Return to Task List

The external alarm plug should already be connected to the J58890CH-1 Power Distribution Unit. The pinout for the connector is shown in External Alarm Connector Pinout.

Note:
RS-232 alarms (RXD, DTR, DSR, TXD, RS-232 GRD, and RTS) are not supported on the BU3200A Battery Interface Unit.

1. Choose an alarm to connect (such as Battery Interface Failure).
2. Choose the port circuit pack to use and its carrier and slot number (from Port Circuit Pack and Telephone Pin Designations). For example TN2183 Analog Line, Cabinet 1, Carrier C, Slot 1.
3. Choose a port circuit on the port circuit pack, for example Port 3.
4. Install cross-connect jumpers to connect the named pins from the alarm wires to the appropriate pins on the port circuit pack.

Note:
It is recommended that the RFA, ACF, and BIF alarm leads be connected to the major alarm device and the BOD alarm leads be connected to the minor alarm device.

5. Connect the major and minor alarm devices to the appropriate cross- connect pins on the MDF.
6. Administer the alarms using the *Administrator's Guide for Avaya Communication Manager*.

External Alarm Connector Pinout		
Pin	**Designation**	**Definition**
26	Not Used	
1	Not Used	
27	Not Used	
2	Not Used	
28	Not Used	
3	Not Used	
29	Not Used	

External Alarm Connector Pinout		
Pin	**Designation**	**Definition**
4	Not Used	
30	Not Used	
5	Not Used	
31	Not Used	
6	Not Used	
32	Not Used	
7	Not Used	
33	RFA2 +	Rectifier Failure (positive)
8	RFA2 -	Rectifier Failure (negative)
34	ACF2 +	AC Failure (positive)
9	ACF2 -	AC Failure (negative)
35	BIF2 +	Battery Interface Failure (positive)
10	BIF2 -	Battery Interface Failure (negative)
36	BOD2 +	Battery On Discharge (positive)
11	BOD2 -	Battery On Discharge (negative)
37	Not Used	
12	RXD	Receive Data
38	TXD	Transmit Data
13	DTR	Data Terminal Ready
39	RS-232 GRD	RS-232 Ground
14	DSR	Data Set Ready
40	RTS	Request To Send
15	Not Used	
41	Not Used	
16	Not Used	
42	Not Used	
17	Not Used	
43	Not Used	
18	Not Used	
44	Not Used	
19	Not Used	
45	Not Used	
20	Not Used	
46	Not Used	
21	Not Used	
47	Not Used	
22	Not Used	

External Alarm Connector Pinout		
Pin	**Designation**	**Definition**
48	Not Used	
23	Not Used	
49	Not Used	
24	Not Used	
50	Not Used	
25	Not Used	

Port Circuit Pack and Telephone Pin Designations

Pin on Modular Plug	4-wire; 302C1, 8400-Series, 603E, 9403, 9434	2-wire; 302C1, 8400-Series, 603E, 9403, 9410, 9434	8510T Basic Rate Interface (BRI) (with adjunct speaker phone)	Analog Station, Modem	NT1	Z3A1 & Z3A2 Asynchronous Data Units (ADU), Data Module
1	TXT					TXT
2	TXR			T		TXR
3	PXT		TXT	R		PXT
4		T	PXR		T	
5		R	PXT	No Connection 4-pin modular jack	R	
6	PXR		TXR			PXR
7	-48VDC	(-48VDC)	(-48VDC)		-48VDC	
8	GRD	GRD	GRD		GRD	
Circuit Pack	TN754 4-wire digital (8 port)	TN2181 2-wire digital (16 port) TN2224 2-wire digital (24 port)	TN556 ISDN-BRI Line	TN2183 Analog line (16 port)	TN2198 2-wire Basic Rate Interface line	TN726 Data Line

PX PBX transmitT Tip (A)
TX Terminal transmitRRing(B)

Return to Task List

Remote Network Interface

Return to Task List

The Remote Network Interface (formerly Initialization and Administration System (INADS) provides a 9600 bps modem connection for the remote management terminal. The network interface trunk should appear on the twenty-fifth pair of a RJ21X network interface jack. The trunk is a two-way, rotary dial, loop start trunk that connects to a maintenance circuit pack, the processor circuit pack, or the SYSAM circuit pack through the Remote Network Interface terminals at the trunk/auxiliary field. Connections at Trunk/Auxiliary Field shows a typical Remote Network Interface trunk installation.

Task List: Install the Remote Network Interface

1. Install the Remote Network Interface
2. Install Off-Premises Station Wiring

Connections at Trunk/Auxiliary Field

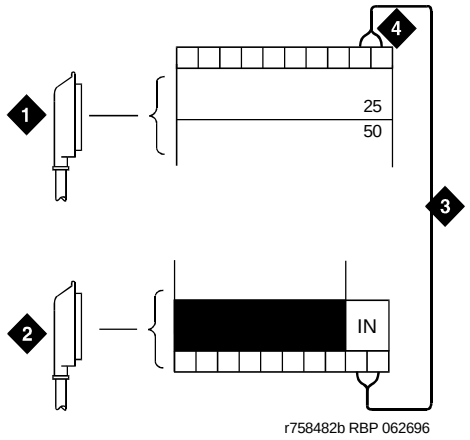


Figure Notes:

[1] To Network Interface Facility

[2] To Control Carrier Auxiliary Connector

[3] One Pair of Wires

[4] Twenty-fifth Pair of RJ21X Network Interface Jack

Install the Remote Network Interface

Begin

Return to Task List

You must obtain the product identification and the INADS OSS telephone number from the NTSO or the TSC before you begin to install the Remote Network Interface.

Connections at Trunk/Auxiliary Field shows a typical Remote Network Interface trunk installation.

1. Determine the network interface trunk appearance at the green trunk/auxiliary field.
2. Label the terminals for the trunk appearance.
3. Install jumpers between the trunk appearance and Remote Network Interface terminals.

4 Enter **change system-parameters maintenance** and press **Enter**.

5 Enter the ten-digit product identification. Enter the INADS OSS telephone number in the **First OSS Telephone Number** field.

6 Enter **first-only** in the **Alarm Origination to OSS Numbers** field and press **Enter** to enable Alarm Origination (to the first OSS).

7 If they are needed, enable **Cleared Alarm Notification** and **Restart Notification**.

Note:

Avaya Media Gateway supports up to two OSS telephone numbers. Some services contracts may require the second OSS telephone numbers and a different option in the **Alarm Origination to OSS Numbers** field to be administered.

Connections at Trunk/Auxiliary Field

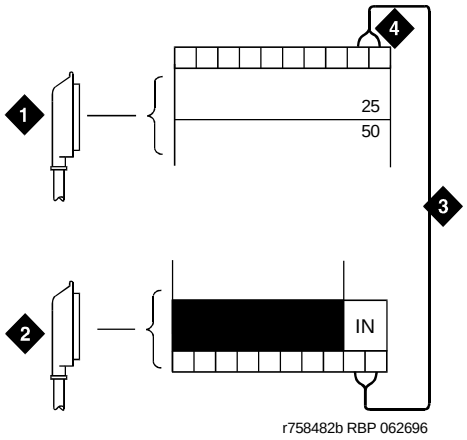


Figure Notes:

[1] To Network Interface Facility

[2] To Control Carrier Auxiliary Connector

[3] One Pair of Wires

[4] Twenty-fifth Pair of RJ21X Network Interface Jack

Return to Task List

Install Off-Premises Station Wiring

Begin

Return to Task List

The local telephone company provides cabling outside the building for off-premises stations. The off-premises stations can appear on any of the RJ21X network interfaces provided for the Central Office (CO) trunks.

CAUTION:

Only an FCC-approved (or equivalent) analog type telephone (such as a 2500-type), can be used as an off-premises station. The TN746B and TN2183 Analog Line circuit packs can be connected to off-premises stations.

1 Install an A25D (male to male) cable between the RJ21X network interface and a sneak fuse panel.

2. At the Main Distribution Frame (MDF), connect jumper wires between one row/connecting block in the green field and up to three rows/connecting blocks in the purple field to concentrate the analog line pairs.
3. Connect an A25D cable between the sneak fuse panel and the terminal block connector associated with the green row in the previous step.
4. Install a green label on the terminal block to identify the remote location.
5. Administer per the *Administrator's Guide for Avaya Communication Manager*.

Return to Task List

Off-Premises or Out-of-Building Stations

Return to Task List

Out-of-building campus stations are telephones/voice terminals not physically located in the same building as the equipment room but located on the same property. Only analog telephones connected to TN742, TN746B, TN2183, or TN769 Analog Line circuit packs can be installed out-of-building.

Task List: Off-Premises Requirements

- Off-Premises Connections
- Off-Premises Protection Requirements
- Voice Terminal Restrictions for Exposed Environments
- Digital Out-of-Building Voice Terminal Protection

Off-Premises Connections

Return to Task List

Connections for 1 to 8 Out-of-Building Analog Telephones shows the connections for 1 to 8 off-premises analog telephones.

Connections to 24 Out-of-Building Telephones shows the connections for up to 24 off-premises analog telephones. Concentrations of analog line pairs are used at both buildings to minimize the off-premises wiring required. At the MDF, jumpers must be connected between 1 row/connecting block in the white field and up to 3 rows/connecting blocks in the purple field. At the station location, a WP-90929, List 1 Concentrator Cable is used. There are 8 station appearances on each of the 3 fingers of the concentrator cable.

The maximum distance from the system cabinet to the out-of-building voice terminal is 6000 feet (1828.8 meters) using 24 AWG (#5) (0.5 mm^2) wire.

The maximum range of out-of-building analog telephones (500-, 2500-, or 7100-types) connected to an analog line circuit pack should be such that the maximum loop resistance does not exceed 1300 ohms.

Connections for 1 to 8 Out-of-Building Analog Telephones

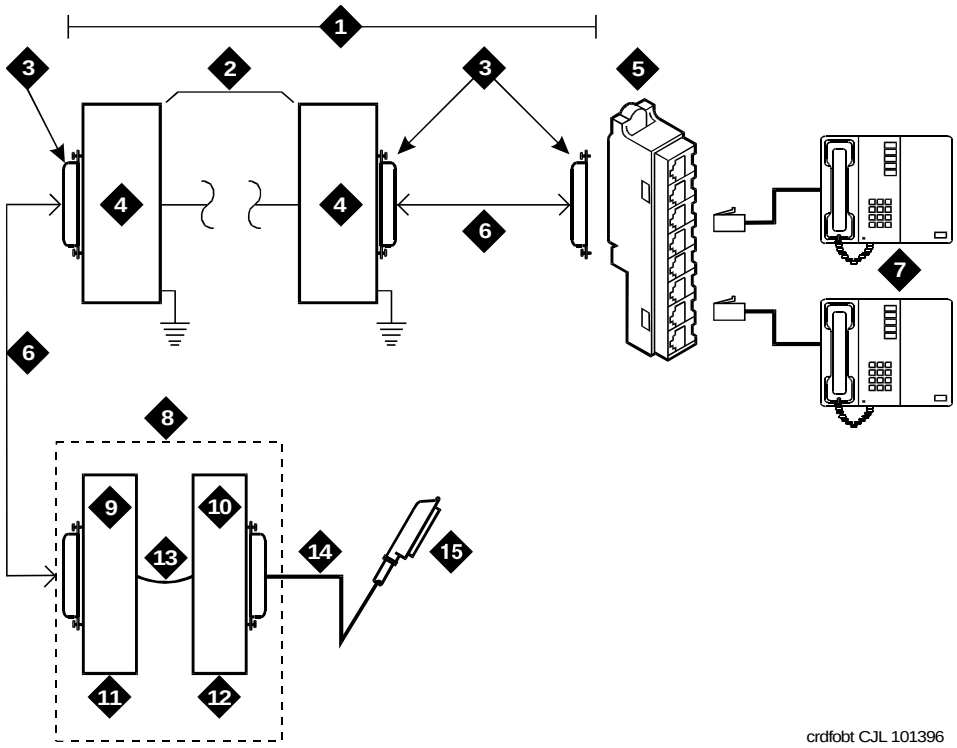


Figure Notes:

[1] Locally Engineered Cables and Equipment

[2] Out-of-Building Wiring

[3] 25-Pair Connector

[4] Multi-Pair Protector Units (Primary Protectors with Heat Coils or Equivalent with Sneak Current Protection)

[5] 356A Adapter

[6] B25A Cable (Male to Female)

[7] Out-Of-Building Analog Telephones

[8] Part of Main Distribution Frame (MDF)

[9] Station Side

[10] System Side

[11] White Field

[12] Purple Field

[13] Cross-Connect Jumpers

[14] Tip and Ring Wires

[15] To Analog Line Circuit Pack

Connections to 24 Out-of-Building Telephones

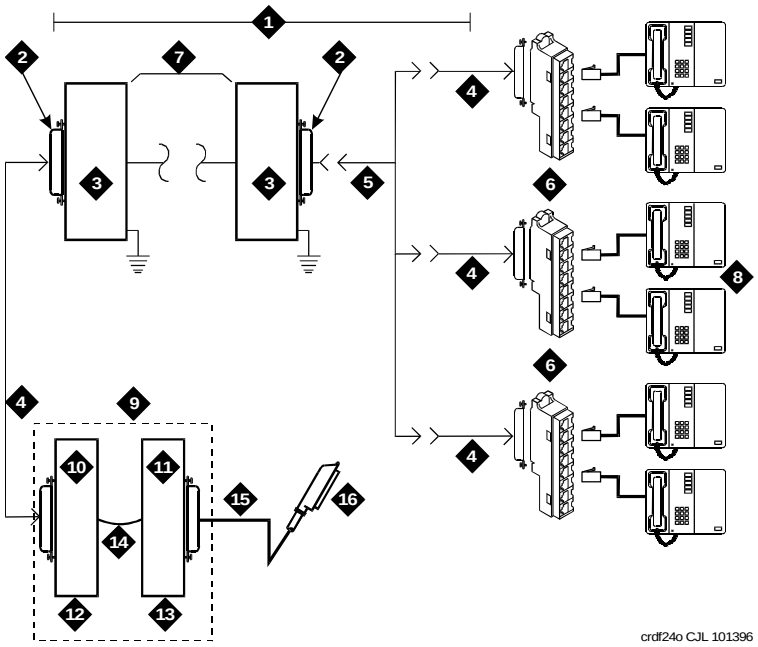


Figure Notes:

[1] Locally Engineered Cables and Equipment

[2] 25-Pair Connector

[3] Multi-Pair Protector Units (Primary Protectors with Heat Coils or Equivalent with Sneak Current Protection)

[4] B25A Cable (Male to Female)

[5] Concentrator Cable (WP90929 List 1)

[6] 356A Adapter

[7] Out-of-Building Wiring

[8] Out-Of-Building Analog Telephones

[9] Part of Main Distribution Frame (MDF)

[10]Station Side

[11]System Side

[12]White Field

[13]Purple Field

[14]Cross-Connect Jumpers

[15]Tip and Ring Wires

Return to Task List

Off-Premises Protection Requirements

Begin

Return to Task List

Both building entrances require carbon block or equivalent protection and sneak current protection. Protection can be provided by:

- a 4-type protector, which is equipped with a heat coil
- a 3-type protector plus a separate sneak current protector

The 4-type protector is the preferred device. For installations not using primary protection, 4-type protectors should always be used. When the 3-type protector is already installed, a separate sneak current protector is required.

The multi-pair protector units and the off-premises cabling must be locally engineered. Connectorized multi-pair protector units (female 25-pair connector) are recommended. Analog Line Circuit Protectors shows the recommended protectors.

The protectors can be ordered from the *Premises Distribution Systems Equipment and Supplies Catalog*.

Analog Line Circuit Protectors

Primary[1]	Primary (with heat coil)	Sneak Current Protectors1
3B1A (carbon)	4B1C (carbon)	220029 Fuse
3B1E-W (wide gap gas tube)	4B1E-W (wide gap gas tube)	SCP-1
3C1S (solid state)	4C1S (solid state)	

1. The 3-type protectors should be used only if they are already part of the existing protection system. A sneak current protector is always required when a 3-type primary protector is used.

Return to Task List

Voice Terminal Restrictions for Exposed Environments

Begin

Return to Task List

The following voice terminals cannot be installed in an exposed environment:

- 7300-type voice terminals connected to TN762 Hybrid Line circuit packs
- Multi-button Electronic Telephone (MET) sets connected to TN735 Multi-button Electronic Telephone (MET) Line circuit packs
- Analog telephones connected to TN746 Analog Line circuit packs

Return to Task List

Digital Out-of-Building Voice Terminal Protection

Begin

Return to Task List

For information about specific protectors, see

Installing the ITW Linx Enhanced Protector

Installing the 4C3S-75 Enhanced Protector

Installing the Data Link Protector

Digital out-of-building voice terminals require protection at both building entrances. The 4C3S-75 Enhanced Protector and the ITW Linx Enhanced Protector can be used to protect digital voice terminals and digital line circuit packs. These units provide primary and sneak current protection. The 4C3S-75 is equipped with a heat coil for sneak current protection, and the ITW Linx is equipped with replaceable fuses for sneak current protection.

Note:
The TN2181 16 Port Two-Wire Digital Line circuit pack may not be approved for some out-of-building uses. Contact your Avaya representative for more information.

The 4C3S-75 may be used only with Vintage 14 or newer TN754 circuit packs or TN754B circuit packs. Digital Voice Circuit Protectors lists the approved protectors.

When possible, all new and reused wiring installations should use blocks that accept the standard 5-pin plug-in 4C3S-75 protector. However, there are reused wiring installations where this may not be cost effective. For these installations, the ITW Linx protector may be installed.

> An example of this is where screw-type carbon block protectors — or other non plug-compatible types — are in place and it is too costly to re-terminate the outside plant cable on a 5-pin mounting block for only a few out-of-building terminals.

Installing the ITW Linx Enhanced Protector

The ITW Linx Enhanced Protector can be installed in series with existing primary protection. The ITW Linx Enhanced Protector mounts directly on connecting blocks and requires a separate ground bar.

Installing the 4C3S-75 Enhanced Protector

The 4C3S-75 protector cannot be installed in series with other types of primary protection. It must be installed as the only protection on the line entering the building. For the 4C3S-75 protector there are a variety of 25-, 50-, and 100-pair protector panels equipped with 110-type connecting blocks and/or RJ21X connectors.

Installing the Data Link Protector

Return to Task List

The maximum range for out-of-building digital voice terminals is 3400 feet when using 24 AWG (#5) (0.5 mm^2) wire and 2200 feet (670 m) when using 26 AWG (#4) (0.4 mm^2) wire. The range can be extended to 5000 feet (1524 m) using 24 AWG (#5) (0.5 mm^2) wire or 4000 feet (1220 m) using 26 AWG (#4) (0.4 mm^2) wire with the use of a data link protector. The protector is an isolating transformer used to remove phantom power on the system side and re-introduce it on the terminal side.

When a protector is used, the voice terminal must be locally powered by an external power supply or through the AC power cord provided with some of the 7400-type voice terminals. The protector is installed on the equipment side of the protection in both buildings.

Refer to Example Adjunct Power Connections and Connections at Trunk/Auxiliary Field.

Digital Voice Circuit Protectors	
Circuit Pack	**Enhanced Primary Protector (With Sneak Current Protection)**
TN754 V13 or earlier	ITW Linx Only
TN754 V14 or later	4C3S-75 or ITW Linx
TN754B all vintages	4C3S-75 or ITW Linx
TN2181 all vintages	4C3S-75 or ITW Linx
TN2224 all vintages	4C3S-75 or ITW Linx

Refer to Example Adjunct Power Connections and Connections at Trunk/Auxiliary Field.

Example Adjunct Power Connections

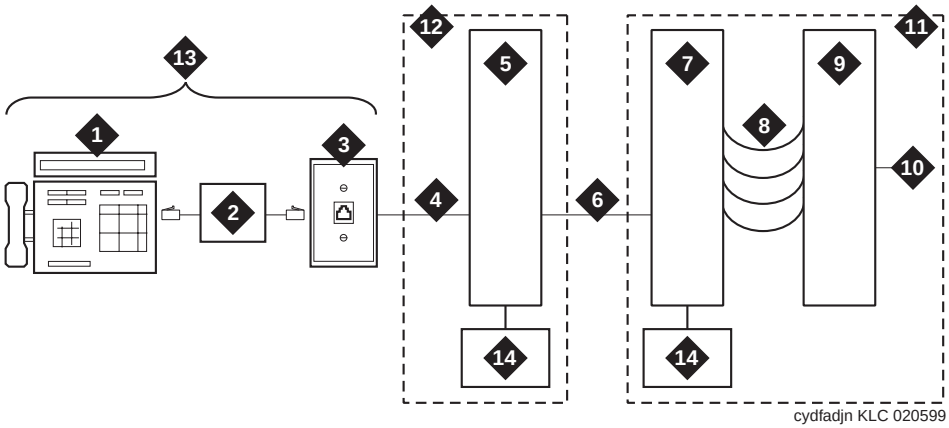


Figure Notes:

[1] Typical Display Telephone

[2] Individual Power Supply (Such as 1151A1 or 1151A2)

[3] Information Outlet (Modular Jack)

[4] 4-Pair D-Inside Wire (DIW) Cable

[5] Satellite Site or Adapter Location

[6] 25-Pair D-Inside Wire (DIW) Cable

[7] Station Side of Main Distribution Frame (MDF)

[8] 100P6A Patch Cord or Jumpers

[9] System Side of Main Distribution Frame (MDF)

[10]25-Pair Cable to System Cabinet (Analog Line Circuit Pack)

[11]Equipment Room

[12]Satellite Location

[13]Work Location

[14]Bulk Power Supply (Such as 1145B)

Connections at Trunk/Auxiliary Field

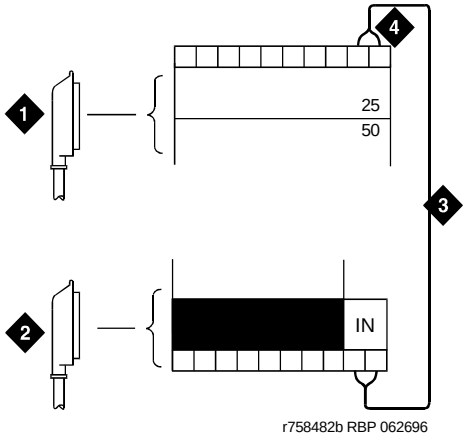


Figure Notes:

[1] To Network Interface Facility

[2] To Control Carrier Auxiliary Connector

[3] One Pair of Wires

[4] Twenty-fifth Pair of RJ21X Network Interface Jack

Return to Task List

Emergency Transfer Units and Associated Telephones

Return to Task List

An 808A Emergency Transfer Panel mounted next to the trunk/auxiliary field provides emergency transfer capability. You can use 500- and 2500-series analog telephones either for emergency transfer or as normal extensions. For emergency transfer, connect the phones directly to the 808A; for normal extensions, wire them through the 808A. Analog Central Office (CO) and Wide Area Telecommunications Service (WATS) trunks can provide emergency transfer capability.

The 808A Emergency Transfer Panel provides emergency trunk bypass or power-fail transfer for up to five incoming Central Office (CO) trunk loops to five selected station sets. The 808A equipment's Ringer Equivalency Number (REN) is 1.0A.

At the Main Distribution Frame (MDF), the unit is controlled by a connection to a yellow terminal row/connecting block in the trunk/auxiliary field. The unit is controlled by -48 VDC from the EM TRANS RELAY PWR terminals. There are seven EM TRANS RELAY PWR terminal pairs that allow powering of up to seven transfer units.

Should power be restored to the relays while a call connected through the 808A is in progress, the 808A maintains the connection until the user goes on-hook. Each 808A can handle up to five Central Office (CO) trunks.

Return to Task List

808A Emergency Transfer Panel and Telephone Installation Examples

Return to Task List

808A Emergency Transfer Panel shows a typical 808A Emergency Transfer Panel. The 808A connects to the Main Distribution Frame (MDF) with B25A or A25B cable.

The panel can be installed on any mounting frame in either a vertical or horizontal position. The housing has ears for screw-mounting and cutouts for snap- mounting the unit in an 89-type mounting bracket. See 808A Emergency Transfer Panel Mounting.

Task List: Typical Emergency Transfer Panel and Telephone Installation

- Install the 808A Emergency Transfer panel
- Install Telephones Used Only for Emergency Transfer (Trunk/Auxiliary Field)
- Install Telephones Used for Emergency Transfer and as Normal Extension (Trunk/Auxiliary Field)

808A Emergency Transfer Panel

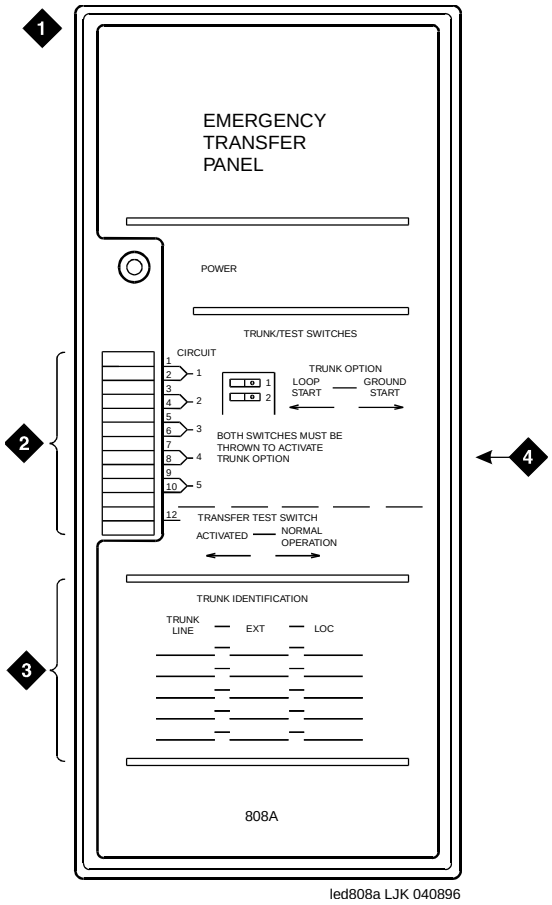


Figure Notes:

[1] 808A Emergency Transfer Panel

[2] Circuit Start Selection Switches

[3] Trunk Identification Label

[4] 25-Pair Male Connector

808A Emergency Transfer Panel Mounting

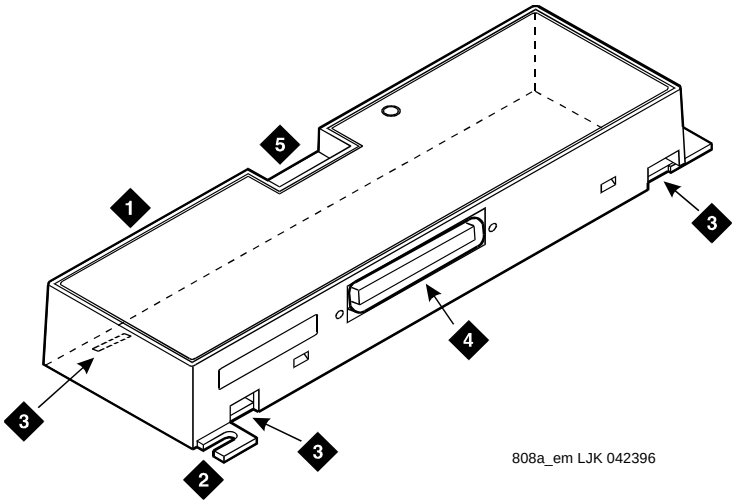


Figure Notes:

[1] 808A Emergency Transfer Panel

[2] Ear for Screw Mount

[3] Cut-Out for Snap Mount

[4] 25-Pair Male Connector

[5] Circuit Start Switches

Install the 808A Emergency Transfer panel

Begin

Return to Task List

Note:
The 808A must be installed in a location that can be accessed only by authorized personnel. The location must meet standard environmental considerations such as temperature, humidity, and so forth.

1. Verify dial tone is present at each trunk circuit.
2. Locate the circuit start selection switches (see 808A Emergency Transfer Panel).

   These are the first 10 two-position switches on the left side of the Emergency Transfer Panel. They are used to set each of the five incoming trunk lines to either loop start or ground start. Two switches are used for each circuit; switches 1 and 2 are used for circuit 1, switches 3 and 4 are used for circuit 2, and so forth. See Trunk/Test Switches.
3. For loop start, set the switches to the left. For ground start, set the switches to the right.
4. Connect a 25-pair cable between the male RJ21 25-pair connector on the Emergency Transfer Panel and the yellow field of the Main Distribution Frame (MDF). Pin Assignments for 25-Pair Connector shows the pinouts.

5. Make cross-connections for each emergency trunk/emergency station pair.

   The 808A is connected to the Main Distribution Frame (MDF) by means of a B25A cable. Connections for Telephone Used for Emergency Transfer shows the connections at the trunk/auxiliary field for a telephone used only for emergency transfer.

   Connections for Telephone Used for Emergency Transfer and as Normal Extension shows the connections at the trunk/auxiliary field for a telephone used for emergency transfer as well as a normal extension.

6. On the trunk identification label at the bottom of the panel, record the trunk line, extension, and location for each circuit.

7. To each voice terminal designated as an emergency terminal, attach a label identifying it as such. The labels are provided with the unit.

8. Check the system for normal operation as follows:

   - Place the test switch (switch 12) in NORMAL OPERATION.
   - Ensure the power supply is providing -48 VDC at 80 mA maximum. The power LED should be ON.
   - Check wiring connections.
   - Verify there is dial tone on all emergency transfer sets.

   If all of the above conditions are not met, remove the panel from service and replace it with a new panel.

9. Check the system for transfer operation as follows:

   - Place the test switch (switch 12) in the ACTIVATED position.
   - The power LED should be OFF.
   - Verify there is dial tone on all emergency transfer sets.

   If all of the above conditions are not met, remove the panel from service and replace it with a new panel.

808A Emergency Transfer Panel

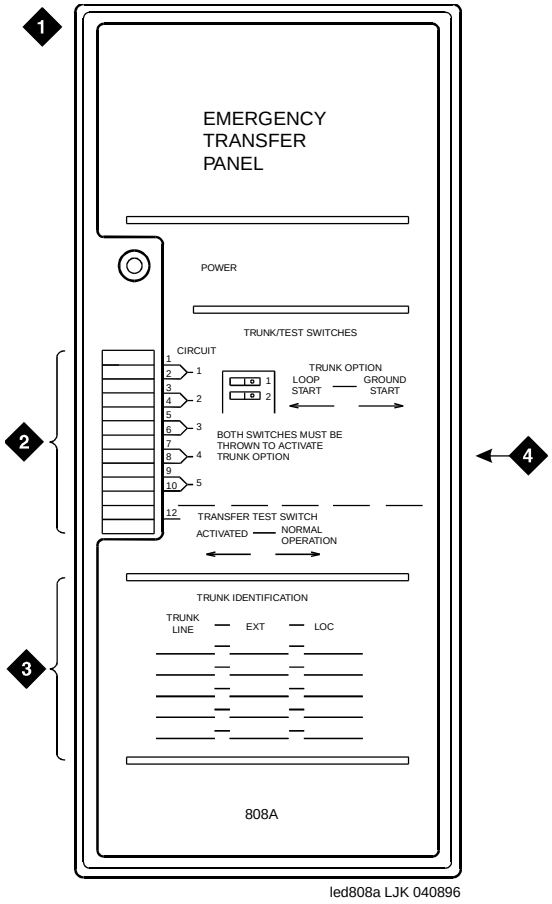


Figure Notes:

[1] 808A Emergency Transfer Panel

[2] Circuit Start Selection Switches

[3] Trunk Identification Label

[4] 25-Pair Male Connector

Trunk/Test Switches	
Switch Number	**Circuit Number**
1	1
2	1
3	2
4	2
5	3
6	3
7	4
8	4
9	5

Trunk/Test Switches	
Switch Number	**Circuit Number**
10	5
11	Not Used
12	Test Switch

Pin Assignments for 25-Pair Connector			
26	W-BL	TTC1	Tip-PBX Trunk Circuit 1
1	BL-W	RTC1	Ring-PBX Trunk Circuit 1
27	W-O	TTK1	Tip-CO Trunk Circuit 1
2	O-W	RTK1	Ring-CO Trunk Circuit 1
28	W-G	TLC1	Tip-PBX Line Port 1
3	G-W	RLC1	Ring-PBX Line Port 1
29	W-BR	TST1	Tip-Emergency Terminal 1
4	BR-W	RST1	Ring-Emergency Terminal 1
30	W-S	TTC2	Tip-PBX Trunk Circuit 2
5	S-W	RTC2	Ring-PBX Trunk Circuit 2
31	R-BL	TTK2	Tip-CO Trunk Circuit 2
6	BL-R	RTK2	Ring-CO Trunk Circuit 2
32	R-O	TLC2	Tip-PBX Line Port 2
7	O-R	RLC2	Ring-PBX Line Port 2
33	R-G	TST2	Tip-Emergency Terminal 2
8	G-R	RST2	Ring-Emergency Terminal 2
34	R-BR	TTC3	Tip-PBX Trunk Circuit 3
9	BR-R	RTC3	Ring-PBX Trunk Circuit 3
35	R-S	TTK3	Tip-CO Trunk Circuit 3
10	S-R	RTK3	Ring-CO Line Port 3
36	BK-BL	TLC3	Tip-PBX Line Port 3
11	BL-BK	RLC3	Ring-PBX Line Port 3
37	BK-O	TST3	Tip-Emergency Terminal 3
12	O-BK	RST3	Ring-Emergency Terminal 3
38	BK-G	TTC4	Tip-PBX Trunk Circuit 4
13	G-BK	RTC4	Ring-PBX Trunk Circuit 4
39	BK-BR	TTK4	Tip-CO Trunk Circuit 4
14	BR-BK	RTK4	Ring-CO Trunk Circuit 4
40	BK-S	TLC4	Tip-PBX Line Port 4
15	S-BK	RLC4	Ring-PBX Line Port 4
41	Y-BL	TST4	Tip-Emergency Terminal 4

Pin Assignments for 25-Pair Connector			
16	BL-Y	RST4	Ring-Emergency Terminal 4
42	Y-O	TTC5	Tip-PBX Trunk Circuit 5
17	O-Y	RTC5	Ring-PBX Trunk Circuit 5
43	Y-G	TTK5	Tip-CO Trunk Circuit 5
18	G-Y	RTK5	Ring-CO Trunk Circuit 5
44	Y-BR	TLC5	Tip-PBX Line Port 5
19	BR-Y	RLC5	Ring-PBX Line Port 5
45	Y-S	TST5	Tip-Emergency Terminal 5
20	S-Y	RST5	Ring-Emergency Terminal 5
46	V-BL	COM1	Common 1 Relay Contact
21	BL-V	NO1	Normally Open 1 Contact
47	V-O	NC2	Normally Closed 2 Contact
22	O-V	NC1	Normally Closed 1 Contact
48	V-G	COM2	Common 2 Relay Contact
23	G-V	NO2	Normally Open 2 Contact
49	V-BR		
24	BR-V		
50	V-S	GRD	Ground from Aux Cable
25	S-V	-48PX	-48V from AUX Cable

Connections for Telephone Used for Emergency Transfer

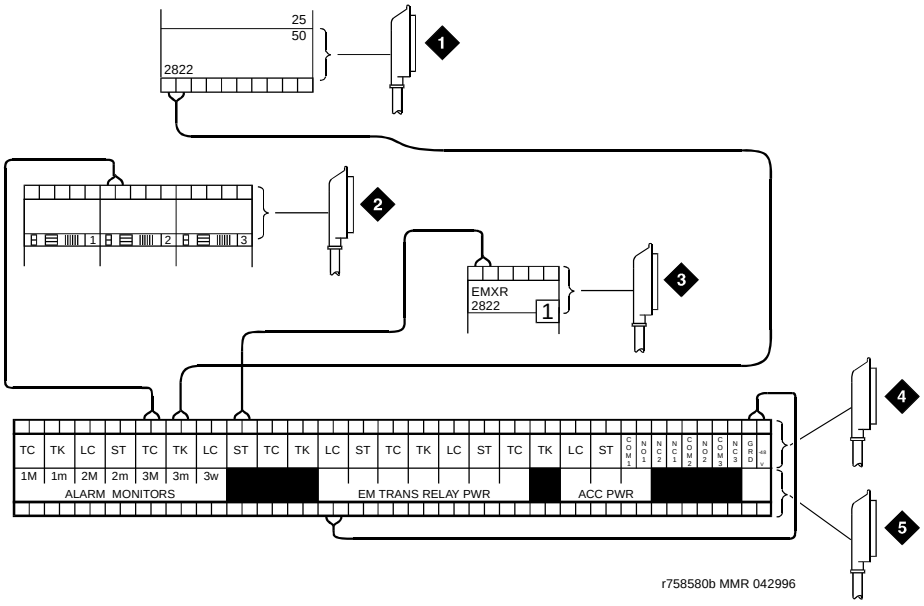


Figure Notes:

[1] To Network Interface Circuitry

[2] To TN747 (or Equivalent) Central Office Trunk Circuit Pack

[3] To Blue or White Station Distribution Field

[4] To Power Transfer Unit

[5] To Control Carrier Auxiliary Connector

Connections for Telephone Used for Emergency Transfer and as Normal Extension

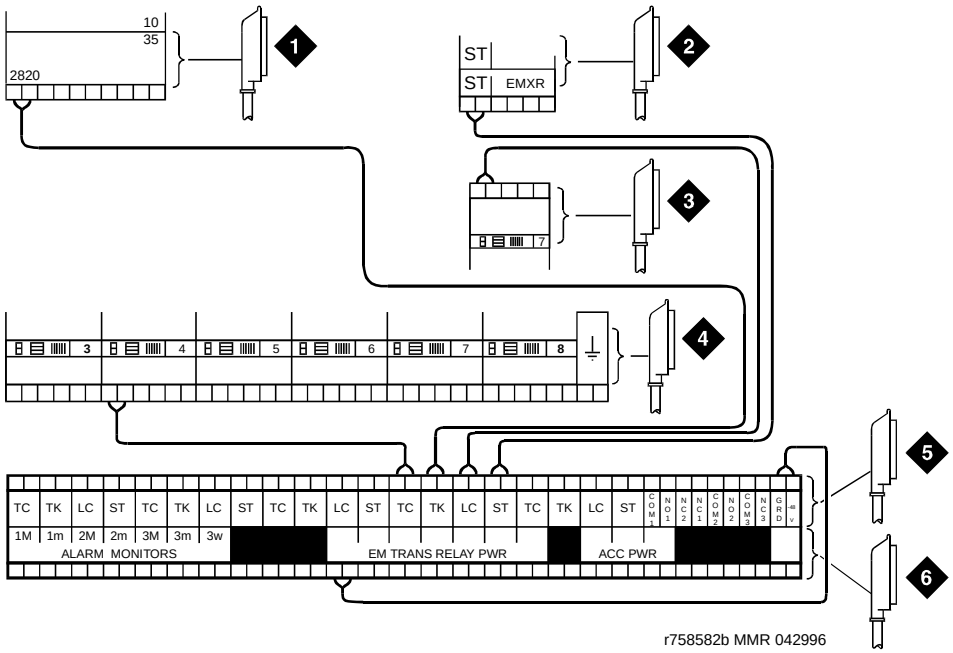


Figure Notes:

[1] To Network Interface Facility

[2] To Blue or White Station Distribution Field

[3] To TN2183 or Equivalent Analog Line Circuit Pack

[4] To TN747 (or Equivalent) Central Office Trunk Circuit Pack

[5] To Power Transfer Unit

[6] To Control Carrier AUX Connector

Return to Task List

Install Telephones Used Only for Emergency Transfer (Trunk/Auxiliary Field)

Begin

Return to Task List

1. Connect a pair of wires between the **-48V** and **GRD** terminals on the yellow emergency transfer row/connecting block and the **EM TRANS RELAY PWR** terminal. See Connections for Telephone Used for Emergency Transfer.
2. Connect Central Office (CO) trunk leads from the purple field to **TC** terminals on the yellow emergency transfer row/connecting block for each trunk.
3. Connect CO trunk leads from the green field to **TK** terminals on the yellow emergency transfer row/connecting block for each trunk.

4 Connect **ST** leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the assigned terminal in the blue or white station distribution field. The **ST** terminal leads should be terminated on the following pairs: 1, 4, 7, 10, 13, 16, 19, or 22 (the first pair of any 3-pair group).

5 Install the telephone:

- ~ Connect telephone to the information outlet.
- ~ Install patch cords/jumper wires between the system side and the station side of the station distribution field on the MDF.

Connections for Telephone Used for Emergency Transfer

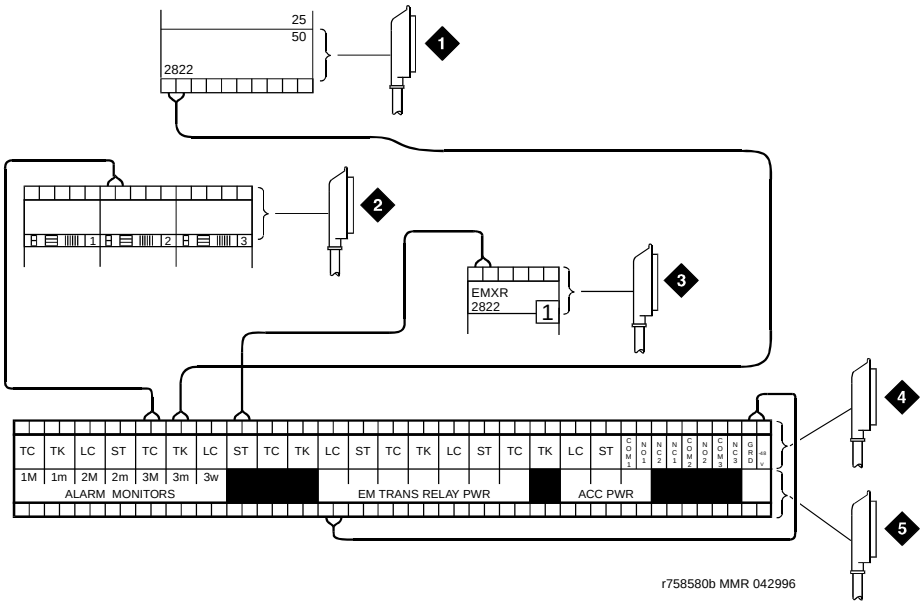


Figure Notes:

[1] To Network Interface Circuitry

[2] To TN747 (or Equivalent) Central Office Trunk Circuit Pack

[3] To Blue or White Station Distribution Field

[4] To Power Transfer Unit

[5] To Control Carrier Auxiliary Connector

Return to Task List

Install Telephones Used for Emergency Transfer and as Normal Extension (Trunk/Auxiliary Field)

Begin

Return to Task List

1 Connect a pair of wires between the **-48V** and **GRD** terminals on the yellow emergency transfer row/connecting block to the **EM TRANS RELAY PWR** terminal. See Connections for Telephone Used for Emergency Transfer and as Normal Extension.

2 Connect CO trunk leads from the purple field to **TC** terminals on the yellow emergency transfer row/connecting block for each trunk.

3 Connect CO trunk leads from the green field to **TK** terminals on the yellow emergency transfer row/connecting block for each trunk.

4 Connect telephone leads from the purple analog line circuit pack row/ connecting block to the **LC** terminals on the yellow emergency transfer row/connecting block for each telephone.

5 Connect **ST** leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the assigned terminal in the blue or white station distribution field.

6 Install the telephone:

- ~ Connect telephone to the information outlet.
- ~ Install patch cords/jumper wires between the system side and the station side of the station distribution field on the MDF.

Connections for Telephone Used for Emergency Transfer and as Normal Extension

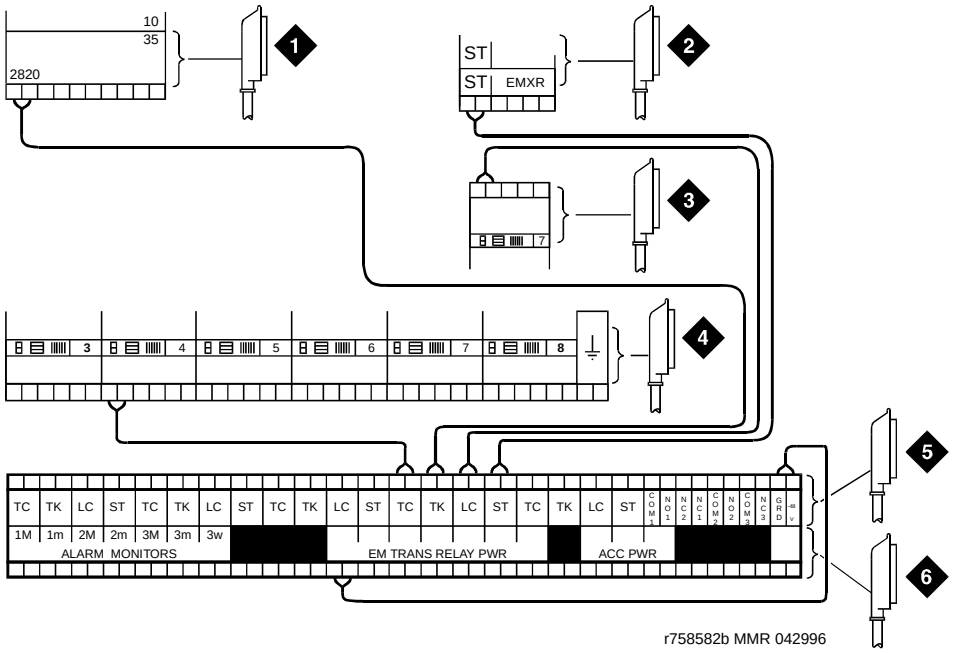


Figure Notes:

[1] To Network Interface Facility

[2] To Blue or White Station Distribution Field

[3] To TN2183 or Equivalent Analog Line Circuit Pack

[4] To TN747 (or Equivalent) Central Office Trunk Circuit Pack

[5] To Power Transfer Unit

[6] To Control Carrier AUX Connector

Return to Task List

Install External Ringing

Begin

Return to Task List

Connections for external ringing are at an information outlet. The system side of the Main Distribution Frame (MDF) is connected to a TN2183 (or equivalent) Analog Line circuit pack. The circuitry and power source for the device are customer-provided.

Note:
A maximum of 3 devices can connect to 1 analog line circuit pack port.

1. Wire the ringing device to the information outlet as shown in 3-Pair and 4-Pair Modularity and Example Adjunct Power Connections.
2. Administer per the *Administrator's Guide for Avaya Communication Manager*.

3-Pair and 4-Pair Modularity

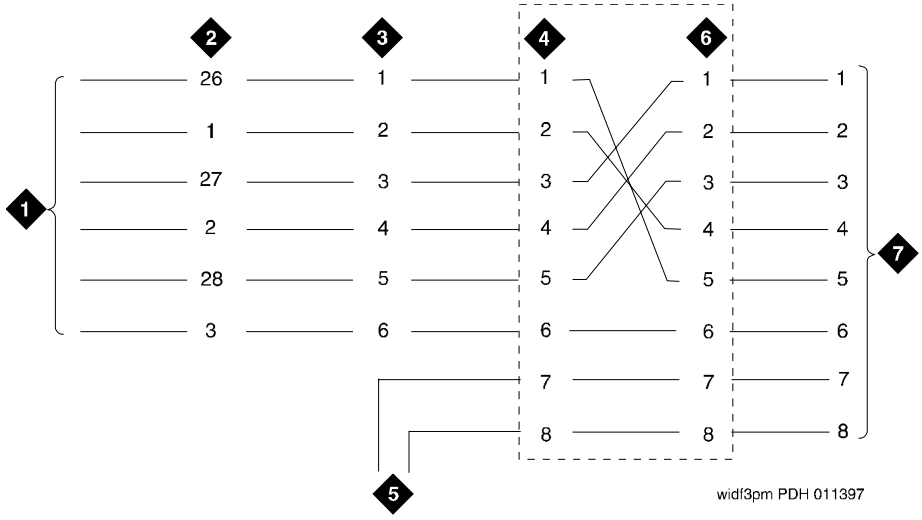


Figure Notes:

[1] Port Circuit Pack

[2] System Cabinet Connector Pins (3-Pair Modularity)

[3] Main Distribution Frame (MDF) Pins (3-Pair Modularity)

[4] Input to Information Outlet (4-Pair Modularity)

[5] Adjunct Power

[6] Output From Information Outlet (4-Pair Modularity)

[7] Voice or Data Terminal Pins

Example Adjunct Power Connections

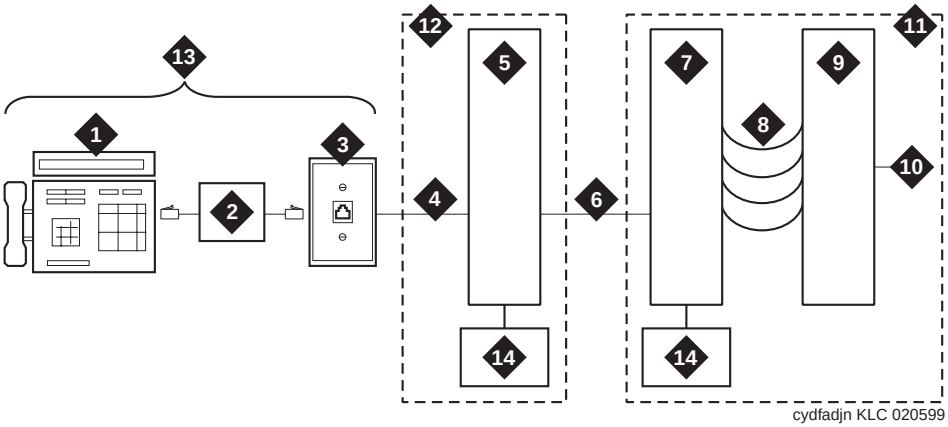


Figure Notes:

[1] Typical Display Telephone

[2] Individual Power Supply (Such as 1151A1 or 1151A2)

[3] Information Outlet (Modular Jack)

[4] 4-Pair D-Inside Wire (DIW) Cable

[5] Satellite Site or Adapter Location

[6] 25-Pair D-Inside Wire (DIW) Cable

[7] Station Side of Main Distribution Frame (MDF)

[8] 100P6A Patch Cord or Jumpers

[9] System Side of Main Distribution Frame (MDF)

[10]25-Pair Cable to System Cabinet (Analog Line Circuit Pack)

[11]Equipment Room

[12]Satellite Location

[13]Work Location

[14]Bulk Power Supply (Such as 1145B)

Return to Task List

Install the Queue Warning Indicator

Begin

Return to Task List

The connections for the queue warning indicator are the same as external ringing. An AC indicator (lamp) such as a 21C49 can be used in a Uniform Call Distribution/Direct Departmental Calling (UCD/DDC) queue.

The lamp is connected to an information outlet. The system side of the MDF is connected to an analog line circuit pack located in a port carrier.

1. Wire the queue warning indicator to the information outlet as shown in 3-Pair and 4-Pair Modularity and Example Adjunct Power Connections.
2. Administer per the *Administrator's Guide for Avaya Communication Manager*.

3-Pair and 4-Pair Modularity

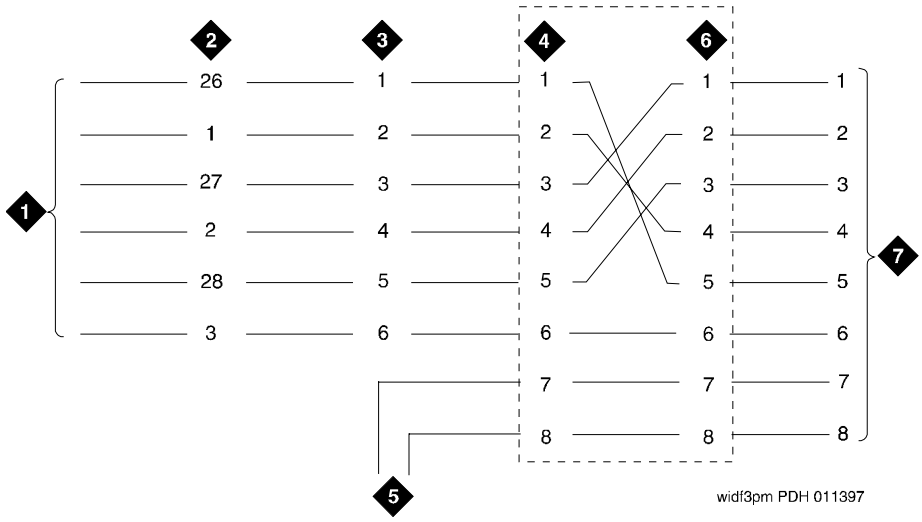


Figure Notes:

[1] Port Circuit Pack

[2] System Cabinet Connector Pins (3-Pair Modularity)

[3] Main Distribution Frame (MDF) Pins (3-Pair Modularity)

[4] Input to Information Outlet (4-Pair Modularity)

[5] Adjunct Power

[6] Output From Information Outlet (4-Pair Modularity)

[7] Voice or Data Terminal Pins

Example Adjunct Power Connections

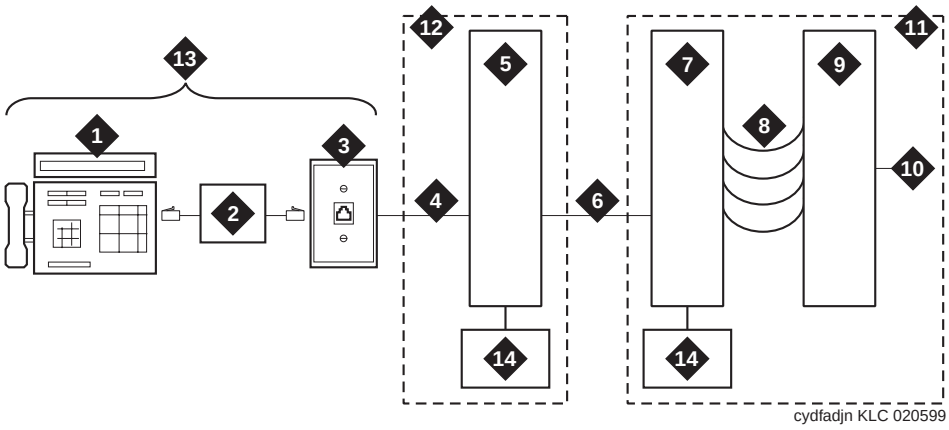


Figure Notes:

[1] Typical Display Telephone

[2] Individual Power Supply (Such as 1151A1 or 1151A2)

[3] Information Outlet (Modular Jack)

[4] 4-Pair D-Inside Wire (DIW) Cable

[5] Satellite Site or Adapter Location

[6] 25-Pair D-Inside Wire (DIW) Cable

[7] Station Side of Main Distribution Frame (MDF)

[8] 100P6A Patch Cord or Jumpers

[9] System Side of Main Distribution Frame (MDF)

[10]25-Pair Cable to System Cabinet (Analog Line Circuit Pack)

[11]Equipment Room

[12]Satellite Location

[13]Work Location

[14]Bulk Power Supply (Such as 1145B)

Return to Task List

Install and Wire Telephone Power Supply

This section provides information and wiring examples of installation procedures for various telephone and console power supplies. These are examples only and actual wiring procedures may vary at each site.

Note:
Refer to the *Installation and Adjuncts and Peripherals for Avaya Communication Manager* to install the necessary peripheral equipment.

Task List: Power Supplies

For 1145B Power Supply, see:

- Important Warning for 1145B Power Supply
- Install the Wall-Mounting Plates
- Mount the 1146B Power Distribution Unit
- Install the Battery Mounting/Wiring
- Install the Expanded Power Distribution Unit
- Power Up and Test the Power Supply
- Wire the 1146B Power Distribution Unit
- Reset LEDs on Power Distribution Unit

For 1151A1 and 1151A2 Power Supplies see:

- Important Safety Instructions for 1151A1 and 1151A2 Power Supplies
- Using 1151A1 and 1151A2 Power Supplies
- Connect the 1151A1 or 1151A2 Power Supplies

1145B Power Supply

The 1145B2 closet power arrangement provides an uninterruptible -48 VDC power source with battery and 1146B2 distribution unit for ISDN/DCP, terminal equipment, adjuncts, and other customer-supplied equipment. During AC power interruptions, batteries automatically provide power to the load. Although this power supply is available, we recommend that you use the 1151B1 or 1151B2 power supplies.

Note:
Before you begin, read this Important Warning for 1145B Power Supply.

Perform these tasks in order:

1. Install the Wall-Mounting Plates
2. Mount the 1146B Power Distribution Unit
3. Install the Battery Mounting/Wiring
4. Install the Expanded Power Distribution Unit
5. Power Up and Test the Power Supply
6. Wire the 1146B Power Distribution Unit

7 Reset LEDs on Power Distribution Unit

1145B/1146B Mounting Arrangement shows how the standard power supply and wall-mounting plates fit together. Expanded Power Distribution Unit shows the expanded power supply components (power distribution unit and “T” cable).

A manual switch on the distribution unit allows the user to redirect reserve power to outputs 1 through 32 so all outputs are provided battery reserve power, or to outputs 1 through 8 to provide high power above 6.25 watts.

Note:
The switch must be set to the 1-32 position.

The 1145B/1146B is a -48V power supply with 275 watts total output. Each output circuit is current limited by a Polymer Positive Temperature Coefficient Resistance Device (PTC) that limits the maximum output to 12 watts. Each 1146B output has an LED to indicate the status of the PTC. If the LED is on, the PTC has a short on that power pair.

Not all outputs can simultaneously provide 12 watts. The average power per output cannot exceed 8.6 watts (275/32 = 8.6). The 1145B is designed to power one ISDN terminal or DCP adjunct per output. The maximum number of terminals or adjuncts is 32 at less than or equal to 6.25 watts each. The 1145B is required for installations outside the United States.

Auxiliary power (local or bulk) is always required for the following:

- Attendant Console 302C1
- Any 8520 terminal
- Any 7500- or 8500-series terminal with an asynchronous data module
- Any 7500-series terminal whether in passive bus, or point to point (one per BRI port)
- Any 8510 terminal in passive bus or with an asynchronous data module (unless the 8510 will not be used to support data or video)
- PassageWay adapter interface
- Some 8400-series terminal and adjuncts
- Some 7400-series terminal and adjuncts

1145B/1146B Mounting Arrangement

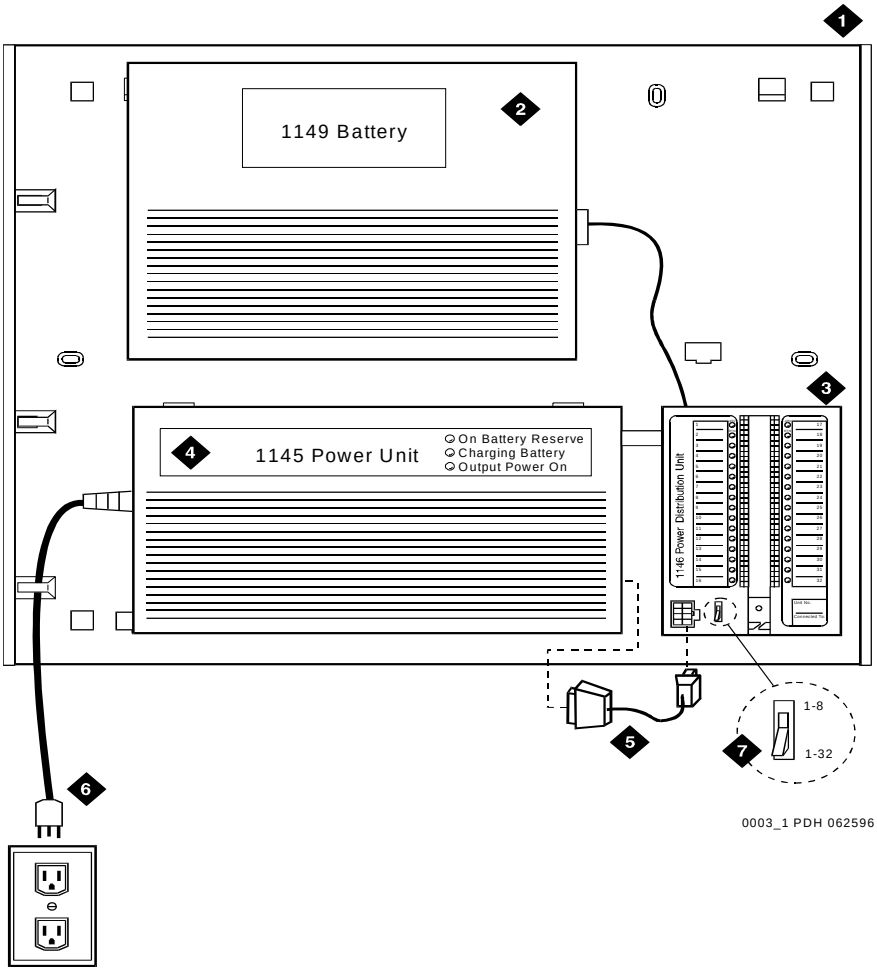


Figure Notes:

[1] Wall Mounting Plate

[2] Battery (1149B Shown)

[3] 1146B Power Distribution Unit

[4] 1145B Power Unit

[5] Power Cable

[6] Unswitched Outlet (120 VAC, 20 Amp or 230 VAC, 15 Amp)

[7] Battery Backup Switch Setting

Expanded Power Distribution Unit

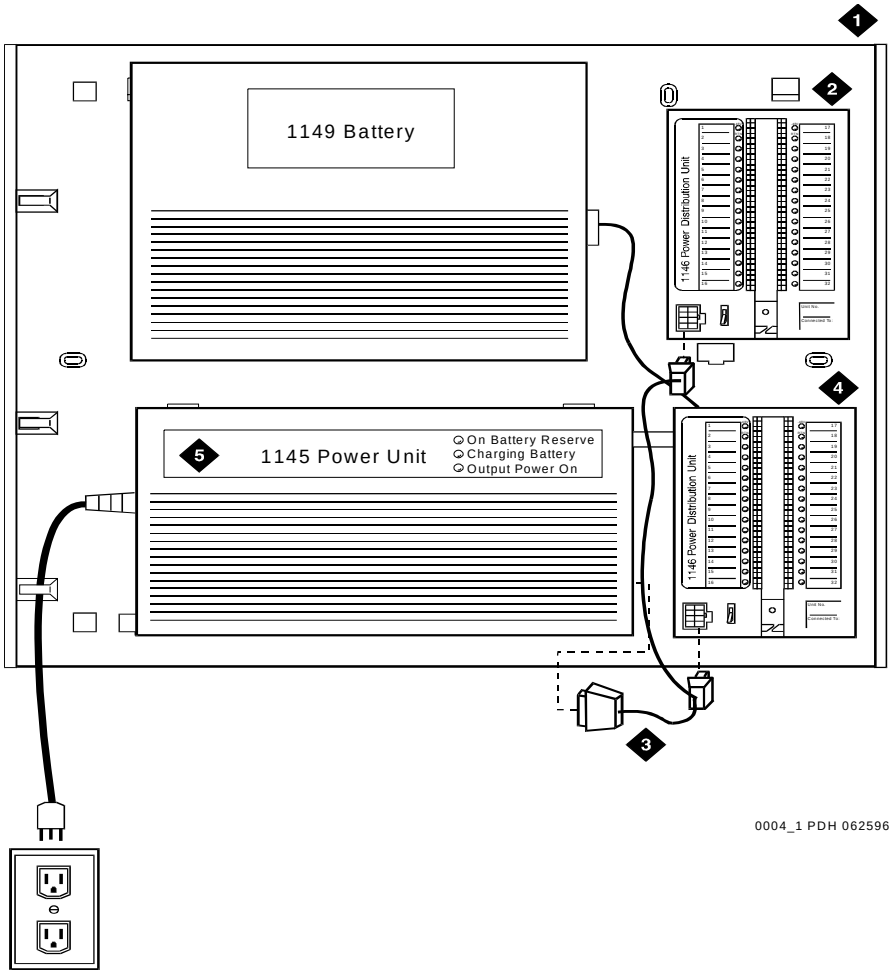


Figure Notes:

[1] Wall-Mounting Plate

[2] Second 1146B Power Distribution Unit

[3] “T” Cable (H600-347-G7)

[4] First 1146B Power Distribution Unit

[5] 1145B Power Unit

Important Warning for 1145B Power Supply

Return to Task List

WARNING:
Important Safety Instructions follow.

When operating this equipment, basic safety precautions must be followed to reduce the risk of fire, electric shock and personal injury, including the following:

- Read and understand all instructions.
- Do not attach the power supply cord to building surfaces.
- For continued back-up protection and battery reliability, replace batteries every four years.

- Follow all warnings and instructions marked on the products.
- Clean products only with a dry rag.
- Do not use this product near water.
- For mounting security, follow all installation instructions when mounting product.
- Openings on top and bottom of power unit are provided for ventilation. Do not block or cover these openings. Do not exceed recommended environmental temperatures.
- Operate these products only from the type of power source indicated on the product labels.
- The power unit is equipped with a three wire grounding type plug; a plug having a third (grounding) pin. This plug will only fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace the outlet. Do not defeat the safety purpose of the grounding type plug.
- Do not allow anything to rest on or spill into the products.
- To reduce risk of fire and electrical shock, do not overload power outlets.
- Never push objects of any kind through the power supply or distribution unit slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electrical shock.
- To reduce risk of electric shock, do not disassemble these products. Return them for repair when needed. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly can cause electric shock when the products are subsequently used.
- Power down the power unit (see label on power unit on how to do this) and refer servicing under the following conditions:
  - If liquid has been spilled into any of the products
  - If any of the products have been exposed to water
  - If any of the products do not operate normally
  - If any of the products have been dropped or damaged
  - If any of the products exhibits a change in performance
- Do not attempt to recharge batteries on your own. The batteries may leak corrosive electrolyte or explode. The 1145B power unit recharges the batteries safely.
- Remove the batteries if the power unit will not be used for a long period of time (several months or more) since during this time the battery may leak.
- Discard discharged batteries as soon as possible. Discharged batteries are more likely to leak.
- Do not store batteries in high temperature areas. Batteries stored in a cold environment should be protected from condensation during storage and warming. Batteries should be stabilized at room temperature prior to use after cold storage. Do not install batteries if the manufacturing date on the label indicates that the batteries are more than six months old.

Return to Task List

Install the Wall-Mounting Plates

Begin

Return to Task List

The top plate is used for mounting the back-up battery. The bottom plate is used to mount the power supply and distribution units. The plates can be rack-mounted using standard rack-mounting brackets. See 1145B/1146B Mounting Arrangement.

1. Locate one plate directly below the other one such that the AC power cord (6.5 feet or 2 meters) reaches the electrical outlet from a power supply mounted on the bottom plate. Both plates should be located so the raised letters are right side up.

Note:
A maximum of four power supplies can be powered from one dedicated 110 VAC, 20 amp (or 230 VAC, 15 amp) feeder. Use only unswitched receptacles (receptacles not connected to a wall switch).

2. Secure the wall mounting plates to a standard 3/4 inch (2 cm) thick plywood mounting board. Each mounting plate comes with four #10 x 1/2-inch wood screws.
3. The 1145B Power Supply is snap-fit onto the bottom wall mounting plate without tools.
4. An installer-provided insulated ground wire, 16 AWG (#12) (1.2 mm^2) or greater, is required to connect the power supply frame ground lug to an approved ground. The frame ground screw is located next to the AC receptacle, to the left of the unit.
5. Mark the Unit Number and Connectivity information on the front label next to the LEDs.

1145B/1146B Mounting Arrangement

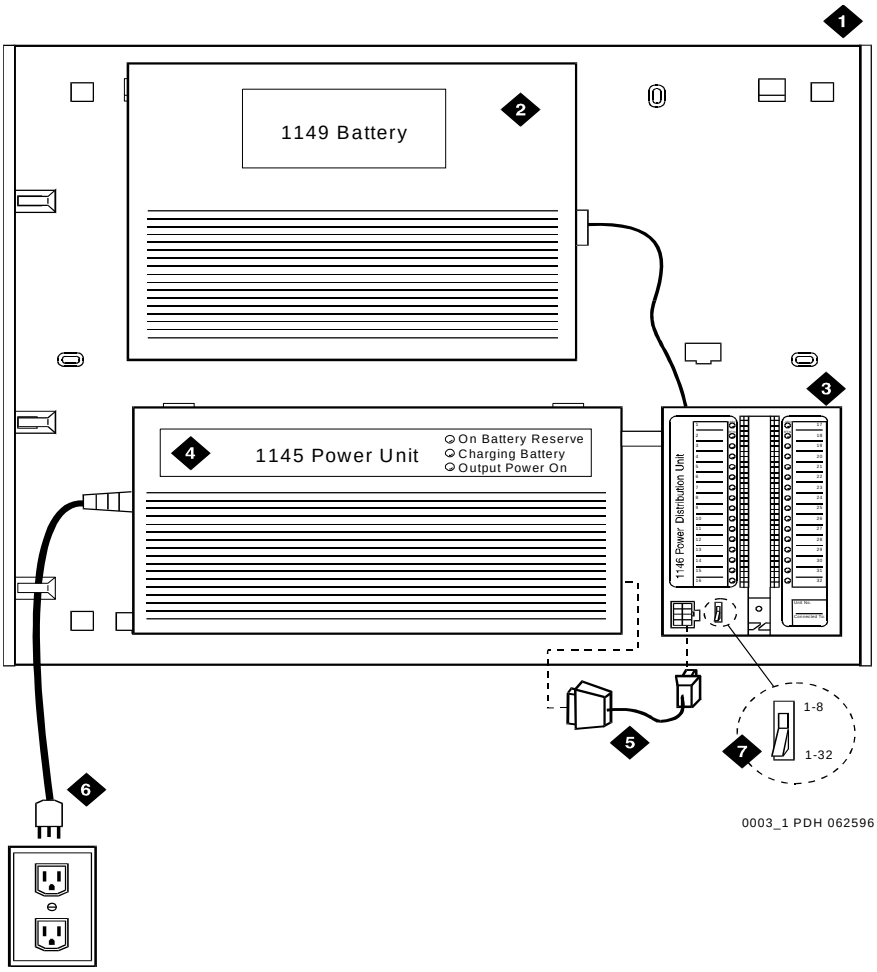


Figure Notes:

[1] Wall Mounting Plate

[2] Battery (1149B Shown)

[3] 1146B Power Distribution Unit

[4] 1145B Power Unit

[5] Power Cable

[6] Unswitched Outlet (120 VAC, 20 Amp or 230 VAC, 15 Amp)

[7] Battery Backup Switch Setting

Return to Task List

Mount the 1146B Power Distribution Unit

Begin

Return to Task List

See the 1146B Power Distribution Unit in Expanded Power Distribution Unit.

1 Insert and securely tighten the two supplied #8-32 x 1/2-inch shoulder screws (they have an unthreaded section at the top) into the top holes designated for 1146B Power Distribution Unit on the bottom plate. Mount the unit on these two shoulder screws, using the key holes on the back of the unit.

2 Secure the unit by inserting the #8-32 x 1 inch screw through the bottom of the unit (just above the wire clips) into the plate and tighten.

3 Set the battery back-up switch option to the 1-32 (down) position to provide battery back-up to all outputs.

4 Connect the power distribution unit to the power supply with the power cable. Refer to the power supply's right-hand label to locate the output power connection.

Expanded Power Distribution Unit

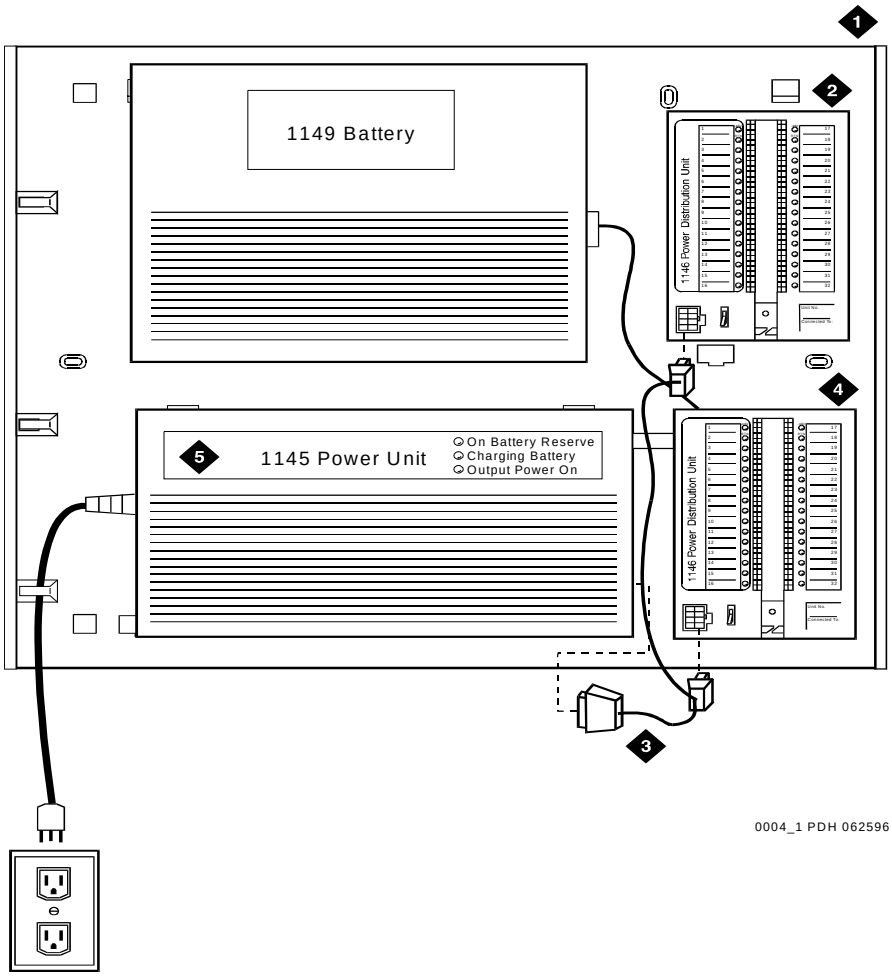


Figure Notes:

[1] Wall-Mounting Plate

[2] Second 1146B Power Distribution Unit

[3] "T" Cable (H600-347-G7)

[4] First 1146B Power Distribution Unit

[5] 1145B Power Unit

Return to Task List

Install the Battery Mounting/Wiring

Begin

Return to Task List

Three types of back-up batteries are used. See Back-Up Battery Rating for the battery type and rating.

1. Insert two #10-32 x 1/2-inch shoulder screws into the top designated battery holes on the wall mounting plate. Lightly screw in but do not tighten.
2. Place the keyhole slots in the battery bracket on these two screws. The battery cord exits from the right of the bracket. Make sure the label on the battery is visible. Tighten the screws securely.
3. Plug the battery cord into the power supply's right rear receptacle. The rear receptacle is indicated on the right label.

Back-Up Battery Rating

Battery	Rating
1148B	2.5 amp-hours
1149B	5 amp-hours
1147B	8 amp-hours

Return to Task List

Install the Expanded Power Distribution Unit

Begin

Return to Task List

A second power distribution unit can be installed to provide power to additional devices.

CAUTION:
Total power cannot exceed 275 Watts. The maximum ISDN terminal mixture is twenty four 7500-series and twenty four 8500-series terminals.

The maximum DCP terminal mixture is twenty four 7400-series and twenty four 8400-series or sixty four 8400-series terminals.

The expanded power distribution unit kit contains:

- One 1146B Power Distribution Unit
- One "T" Cable
- Two #8-32 x 1/2-inch Shoulder Screws
- One #8-32 x 1 inch Screw
- One Spacer Bracket

Refer to Expanded Power Distribution Unit while installing the power distribution unit.

1. Set the spacer bracket onto the mounting plate and secure with the #8-32 x 1/2-inch shoulder screws. The spacer bracket is not shown in the figure but is installed behind the top power distribution unit.
2. Slide the keyhole slots in the power distribution unit over the shoulder screws.

3 Insert the #8-32 x 1 inch screw through the distribution unit, through the spacer bracket, and into the plate. The mounting hole is located just above the wire clip. Tighten the screw securely.

4 Set the battery back-up switch to the 1-32 (down) position.

5 Power-down the 1145B unit as described on the label on the side of the unit.

6 Remove the output power cable between the 1145B and the 1146B units. The cable will not be reused.

7 Connect the P1 connector end of the “T” cable to the bottom power distribution unit. Connect the P2 connector to the top distribution unit. Connect the P3 connector to the 1145B.

8 Power-up the 1145B as described on the label on the side of the unit.

Expanded Power Distribution Unit

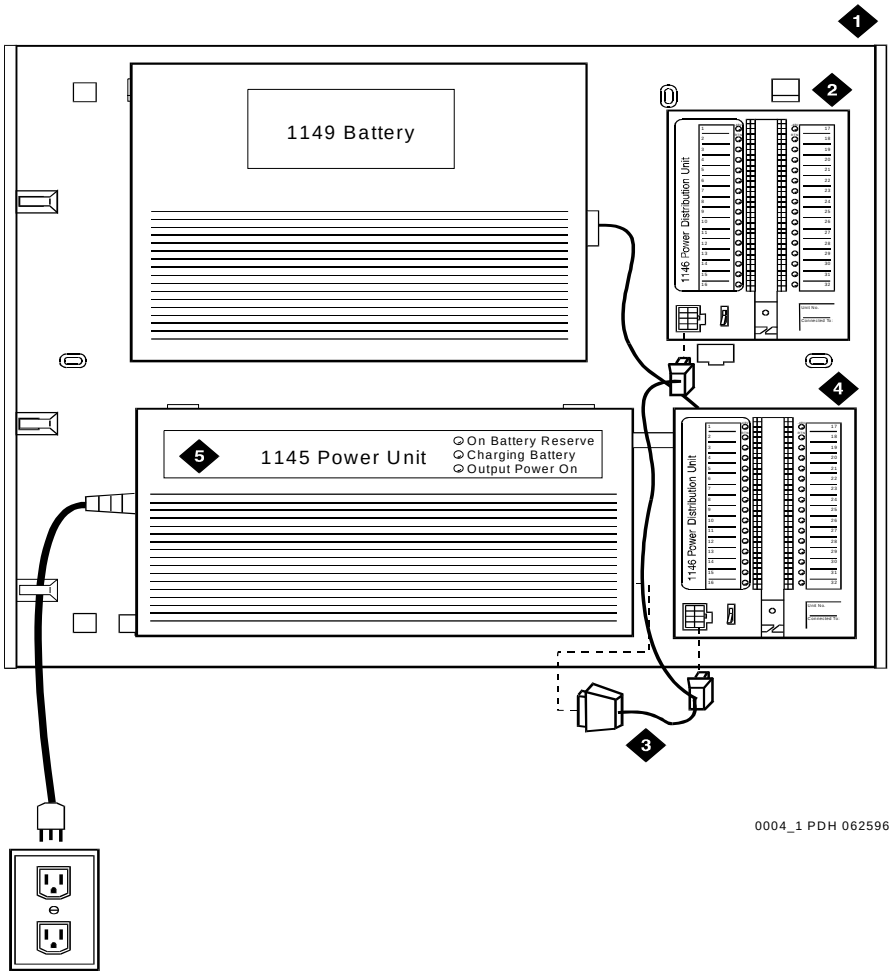


Figure Notes:

[1] Wall-Mounting Plate

[2] Second 1146B Power Distribution Unit

[3] “T” Cable (H600-347-G7)

[4] First 1146B Power Distribution Unit

[5] 1145B Power Unit

Return to Task List

Power Up and Test the Power Supply

Begin

Return to Task List

The following table describes the meaning of the power supply LEDs when lit.

LED Color	Meaning
Green	Power Supply is providing power
Yellow	Battery is charging
Red	Power Supply is on battery reserve

1. Connect the AC power cord to the power supply and route the cord to an appropriate AC outlet using the clips provided on the unit.

Note:
A maximum of four power supplies can be powered from one dedicated 100V-120V, 50/60 Hz, 20 amp feeder or 200V-240V, 50/60 Hz, 10 Amp feeder. Use only unswitched receptacles.

2. Plug the cord into the outlet. This powers up the power supply.
3. Check AC operation of the 1145B Power Supply by monitoring the LEDs:

   PASS: Green and yellow LEDs at front of the unit should be lit together. Green means the power supply is providing power. Yellow means the battery is being charged. After the battery reaches full charge (maximum of twenty hours), the yellow LED should go out.

   FAIL: If either green or yellow LED is not lit after powering up, check the connections. Test the AC outlet. If power is available and the AC power cord and connections are good, replace the power unit.
4. Disconnect the AC plug on the power supply, this activates the DC supply.
5. Check DC (battery back-up) operation of the 1145B Power Supply by monitoring the LEDs:

   PASS: The red and green LEDs should be lit together. Red means the power supply is on battery back-up.

   FAIL: If either green or red LED is not lit after disconnecting AC power, check the connections. If the connections are good, replace the power unit or batteries.
6. Reconnect AC power to the power supply.

Return to Task List

Wire the 1146B Power Distribution Unit

Begin

Return to Task List

Wire endpoints to the1146B while power from the 1145B is on. A red LED lights if its associated circuit is connected to shorted wiring or to a shorted terminal.

1. Install cross-connect jumpers to wire from the unit (the label shows polarity) to Pins 7 and 8 of the appropriate information outlet. Route the wires through the clip provided on the unit. If a red LED is on, see Reset LEDs on Power Distribution Unit. See Typical Wiring to a Terminal.
2. Mark lead destinations on the label next to each connector. Also mark the Unit Number and Connectivity information on the label.

Typical Wiring to a Terminal

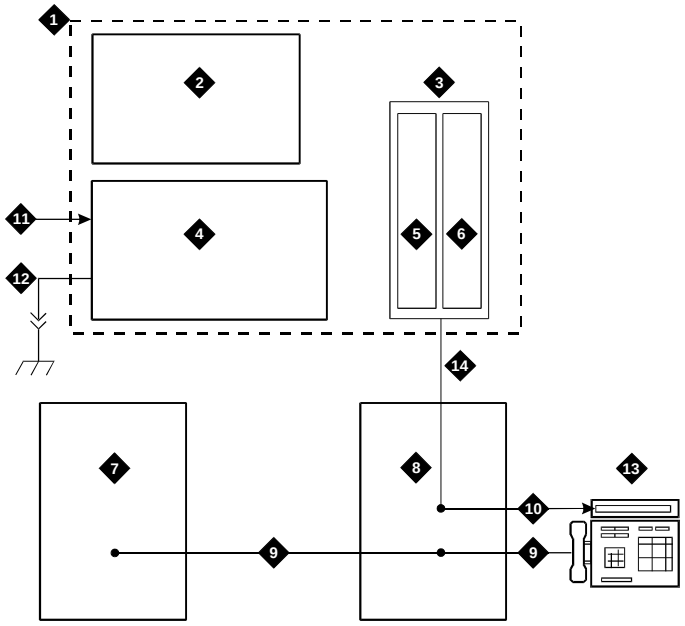


Figure Notes:

[1] Power Supply Kit

[2] 2.5, 5.0, or 8.0 Amp Hour Battery

[3] 1146B Distribution Unit

[4] 1145B Power Supply

[5] Circuits 1-16

[6] Circuits 17-32

[7] Port Circuit

[8] Main Distribution Frame

[9] Modular Cord

[10]Pins 7 and 8 (Display Terminal Power)

[11]AC Input

[12]Installer-Provided Ground Wire

[13]ISDN/ Display System Protocol Terminal

[14]Circuits 1-32

Return to Task List

Reset LEDs on Power Distribution Unit

Begin

Return to Task List

A red LED next to any of the 32 power output connectors indicates a short circuit in the building wiring or the terminal equipment. To reset the LED:

1 Disconnect the terminal equipment from the wall jack.

2 If the LED goes off, the terminal equipment is faulty and must be replaced. If the LED is still lit, find and repair the short circuit in the building wiring.

3 Reconnect the terminal equipment to the wall jack and re-test terminal equipment operation.

Return to Task List

1152A1 Mid-Span Power Distribution Unit

Begin

The 1152A1 Mid-Span Power Distribution Unit (PDU) is an Ethernet power supply that provides power to up to 24 46xx-series IP telephones or wireless LAN (WLAN) access points. This unit is used with a 10/100BaseTx standard Ethernet network over a standard TIA/EIA-568 Category 5, 6 or 6e cabling plant. The 1152A1 meets the current requirements of the IEEE802.3af standard for resistive detection.

The 1152A1 PDU complies with the Underwriters Laboratories Inc. (UL) standard UL 1950, second edition.

Complies	UL 1950
Approved	CSA C22.2 No.950 Std.
Approved	CE Regulatory Compliance
Approved	EN 60950
Approved	TUV EN 60950

For safety instructions, see “Important Safety Instructions for 1151A1 and 1151A2 Power Supplies” on page 196.

1151A1 and 1151A2 Power Supplies

Return to Task List

The 1151A1 and 1151A2 Power Supplies comply with the UL Standard UL 1950, second edition.

Complies	UL 1950
Certified	CSA 22.2
Approved	EN6950
Approved	CE

For safety instructions, see Important Safety Instructions for 1151A1 and 1151A2 Power Supplies. For installation instructions, see Connect the 1151A1 or 1151A2 Power Supplies.

Using 1151A1 and 1151A2 Power Supplies

The 1151A1 and 1151A2 Power Supplies can be used to supply local power to ISDN-T 65xx, 74xx, 75xx, 84xx, and 85xx series voice terminals connected to a system and to the 302C1 Attendant Console that requires auxiliary power for its display. The unit can supply power to adjunct equipment such as S201A and CS201A

speakerphones or a 500A Headset Adapter attached to any currently manufactured analog, DCP, or ISDN-T voice terminal equipped with an adjunct jack.

CAUTION:
The power supply can be used *only* with telecommunications equipment, indoors, and in a controlled environment.

The power supply has a single output of -48 VDC, 0.4 Amps, and can operate from either a 120 VAC 60 Hz power source (105 to 129 VAC) or a 220/230/240 VAC 50 Hz power source (198 to 264 VAC). Input voltage selection is automatic. The output capacity is 19.2 Watts.

The power supply can be placed on a flat surface such as a desk. For wall-mounting, keyhole slots are provided on the bottom of the chassis.

CAUTION:
Do not locate the unit within six inches (15.25 cm) of the floor.

Return to Task List

Important Safety Instructions for 1151A1 and 1151A2 Power Supplies

Return to Task List

Please read the following helpful tips. Retain these tips for later use.

When using this power supply, the following safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons.

- Read and understand all instructions.
- Follow all warnings and instructions marked on this power supply.
- This product can be hazardous if immersed in water. To avoid the possibility of electrical shock, do not use it near water.
- To reduce the risk of electric shock, do not disassemble this product except to replace battery.
- This product should be operated only from the type of AC power source indicated on the label. If you are not sure of the type of AC power being provided, contact a qualified service person.
- Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.
- Do not overload wall outlets and extension cords as this can result in the risk of line or electric shock.
- Disconnect the cords on this product and refer servicing to qualified service personnel under the following conditions:
  - When the power supply cord or plug is damaged or frayed.
  - If liquid has been spilled into the product.
  - If the product has been exposed to rain or water.
  - If the product was dropped or the housing has been damaged.
  - If the product exhibits a distinct change in performance.
  - If the product does not operate normally by following the operating instructions.

Return to Task List

Connect the 1151A1 or 1151A2 Power Supplies

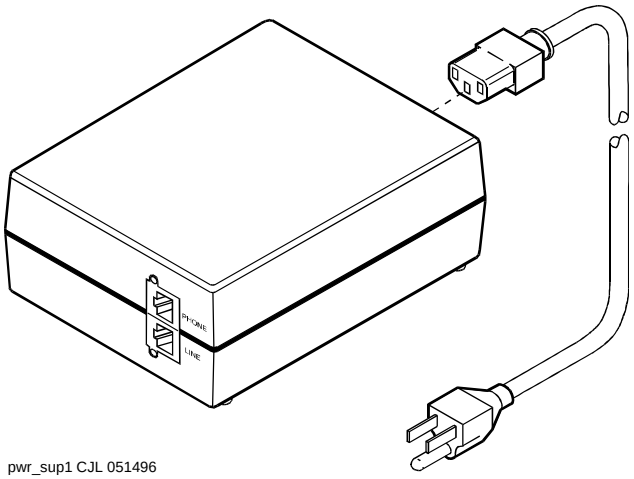
Begin

Return to Task List

The 1151A1 is a standard (no battery backup) power supply unit. The 1151A2 is a battery backup version of the 1151A1. Either power supply can support one telephone with or without an adjunct. The maximum loop range is 250 feet (76 meters). Two modular jacks are used. Power is provided on the PHONE jack, pins 7 and 8 (- and +, respectively).

The PHONE and LINE jacks are 8-pin female non-keyed 657-type jacks that can accept D4, D6, and D8 modular plug cables. See an 1151A1/2 Power Supply — Front.

1151A1/2 Power Supply — Front



pwr_sup1 CJL 051496

Return to Task List

Install Additional Hardware

This section provides information about and procedures for installing additional port circuit packs and other equipment to add more functionality to the DEFINITY ECS.

For procedures to install Avaya Media Gateways (IP) solutions, see Add IP Solutions.

For procedures to install channel service units (CSUs) see Add Channel Service Units.

For procedures to install trunks, see Install and Administer Trunks.

For procedures to upgrade firmware, see Upgrade Firmware on Programmable Circuit Packs.

Avaya Media Gateways do not require an external modem because an internal modem is in the processor circuit pack. For procedures to install modems, see Install and Connect Modems.

Task List: Installing Additional Port Circuit Packs

WARNING:
Electrostatic discharge can severely damage sensitive electronic circuits. Before handling any electronic hardware, be sure to wear a grounding wrist strap or other static-dissipating device.

If adding the packet bus support and TN570s must be installed as part of that support, adding ISDN—BRI requires a service interruption. Notify the customer in advance as to when the addition will be carried out. See Add Packet Bus Support for further information.

Select the information you need:

- Add Port Circuit Packs
- Install and Administer ISDN - BRI
- Add a TN2501AP Announcement Circuit Pack
- Add Multiple Announcement
- Add Speech Synthesis
- Add Code Calling Access
- Add CallVisor ASAI
- Add Packet Bus Support
- Add DCS Interface
- Administer TN464GP/TN2464BP with Echo Cancellation

Installing Other Equipment

To install the following equipment, you must refer to the installation and usage documentation that comes with the product:

- DEFINITY Wireless Business System
- Cellular Business System
- Forum PCM

DEFINITY Wireless Business System

To install and test the hardware, refer to *DEFINITY Wireless Business System Installation and Tests Guide*.

To interface the Wireless Business System to the system cabinet, refer to *DEFINITY Wireless Business System Interface*.

To operate the wireless handsets, refer to *DEFINITY Wireless Business System User's Guide*.

Cellular Business System

The DEFINITY Cellular Business System allows use of the same full-feature cellular telephone inside and outside of the building. The system supports up to 600 users. Total system coverage is up to 4 million square feet.

Refer to the installation and usage documentation that comes with the system components.

Forum PCM

The Forum Personal Communications Manager uses a Forum switch, serving as an adjunct to the Avaya Media Gateway, to manage mobility. The system uses Cordless Telephone Generation 2 (CT2) technology, which is a global standard for wireless telephone service. This standard defines the radio interface between the Forum pocket telephones and the base stations in the system.

Refer to the installation and usage documentation that comes with the Forum Personal Communications Manager components.

Add Port Circuit Packs

Return to Task List

When installing additional features or equipment, it may be necessary to install additional port circuit packs. See Circuit Packs and Circuit Modules by Code for a list of circuit packs. This is a general procedure to use when adding features or equipment that require adding circuit packs.

CAUTION:
Control circuit packs with white rectangles on the label cannot be removed or installed when the power is on. The port circuit packs with gray rectangles on the label (older version port circuit packs had purple labels) can be removed or installed when the power is on.

Topics covered include:

- Circuit Pack and Auxiliary Equipment Classifications
- Installing Circuit Packs

Circuit Pack and Auxiliary Equipment Classifications

Circuit packs are listed by these classifications:

- Analog Line (8)
- 2-Wire Digital & Analog Line (16) and (24)

- Data Line & Digital Line 4-Wire
- 2-Wire Digital & Analog Line 24 Ports
- Hybrid Line
- Multibutton Electronic Telephone (MET) Line
- AUX Trunk
- Central Office Trunk
- Central Office Trunk 3-Wire
- Direct Inward Dialing/Direct Inward Outward Dialing (DID/DIOD) Trunk
- Tie Trunk
- DS1 Tie Trunk
- ISDN BRI Line 4-Wire
- ISDN BRI Line 2-Wire
- Packet Data Line
- Four-Port DIOD

Equipment Classifications	Circuit Packs
Analog Line (8)	TN467 TN432 TN431 TN411B TN742 TN769
2-Wire Digital & Analog Line (16) and (24)	TN2149 TN2135 TN468B TN448 TN746 TN746B TN2181 TN2183 TN793 TN2793
Data Line & Digital Line 4-Wire	TN726B TN754B TN564B TN413
2-Wire Digital & Analog Line 24 Ports	TN2224 TN2214 TN793 TN2793 TN2214B TN2224B TN793B TN2793B
Hybrid Line	TN762 TN762B
Multibutton Electronic Telephone (MET) Line	TN735

Equipment Classifications	Circuit Packs
AUX Trunk	TN417 TN763 TN763D
Central Office Trunk	TN429 TN493 TN422 TN421 TN438B TN447 TN465C TN747B TN2138 TN2147C TN2148
Central Office Trunk 3-Wire	TN2199
Direct Inward Dialing/Direct Inward Outward Dialing (DID/DIOD) Trunk	TN429 TN2139 TN459B TN436B TN753 TN2146 TN414
Tie Trunk	TN478 TN458 TN449 TN760D TN760C TN434 TN415
DS1 Tie Trunk	TN483 TN722 TN767 TN722B TN464F TN464GP
ISDN BRI Line 4-Wire	TN556B
ISDN BRI Line 2-Wire	TN2198
Packet Data Line	TN553
Four-Port DIOD	TN2184

Installing Circuit Packs

Begin

Return to Task List

1 Log in as **craft**.

Note:
If you have a **dadmin** login and password, you can use them instead of craft and the craft password.

2. Type **y** when asked Suppress Alarm Origination? during login.
3. Install the circuit pack(s) into the carrier.
4. Log off the system after all the additions (and any required administration) are complete.

Return to Task List

Install and Administer ISDN - BRI

Return to Task List

Note:
Adding ISDN - BRI requires a service interruption when you add packet bus support and you install TN570s as part of that support. Give the customer advance notice of the scheduled addition. See Add Packet Bus Support for further information.

See BRI Terminating Resistor Installation for an important warning, details on the resistors, adapters, and multipoint installation distances.

Task List: Installing ISDN - BRI

Perform these tasks to install and administer ISDN - BRI:

1. Add Circuit Packs (ISDN BRI)
2. Install Cables (ISDN BRI)
3. Enter Added Translations (ISDN BRI)
4. Resolve Alarms
5. Save Translations (ISDN BRI)

BRI Terminating Resistor Installation

The resistors balance the cable plant between the receiver and the transmitter on the interface. When using the TN2198 ISDN-BRI 2-Wire U Interface circuit pack, an NT1 is required. A terminating resistor is always required near the terminal when the BRI S-type interface circuit pack (TN556 BRI 4-Wire S-NT Line circuit pack) is used (see *5ESS Switch Integrated Services Digital Network Customer Premises Planning Guide*).

The resistor is built into the NT1 and can be one of three values, depending on the configuration and the distance from the NT1 to the ISDN terminal. The resistor value is controlled from the NT1. A terminating resistor adapter may be needed near the terminal and can be placed in the satellite closet or work location.

Note:
The 440A4 terminating resistor and 110RA1-12 terminating resistor block are UL listed. Most new installations are the 110RA1-12 terminating resistor block.

See these BRI terminating resistor topics:

- Important Warning for Telephone Wiring
- Terminating Resistor Adapter and Block
- Installing Multipoint Adapters
- Basic Multipoint Installation Distances

Important Warning for Telephone Wiring

Begin

Observe these precautions:

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.

Terminating Resistor Adapter and Block

Begin

8-Wide Terminating Resistor Adapter (440A4) shows an 8-pin 440A4 terminating resistor adapter. The adapter is three inches long with an 8-wide plug at one end, a short cord, and an 8-wide jack at the opposite end.

The 110RA1-12 terminating resistor block is designed to mount in the telecommunications wire closet. It consists of twelve 2-pair circuits and provides the 100 Ohm termination used for ISDN-BRI circuits.

Terminating Resistor Block (110RA1-12) shows the wiring of the 110RA1-12. Three rows of 110D-4 connector blocks are mounted on a printed wire board along with circuit resistors and capacitors. The bottom row is designated as the input row and the top and middle rows are designated as the output rows. The circuit assembly is mounted on a standard 110A-100 pair mounting base. The 110RA1-12 is shipped with preprinted designation strips to simplify circuit identification and installation.

Typical Installation of Terminating Resistor Block Using Multipoint Connection shows the wiring connections for the 110RA1-12 terminal block. The TN556 BRI switch port is terminated to bottom row C.

For point-to-point wiring, the top row is connected to the blue station field. The pair connects from the 110RA1-12 to the standard 4-pair circuit. Pair 1 from the 110RA1-12 is connected to Pair 1 of the station field, and Pair 2 is connected to Pair 3 of the station field.

Two terminal basic multi-point applications are accommodated by connecting row B (output) to the second terminal common to the multi-point circuit.

8-Wide Terminating Resistor Adapter (440A4)

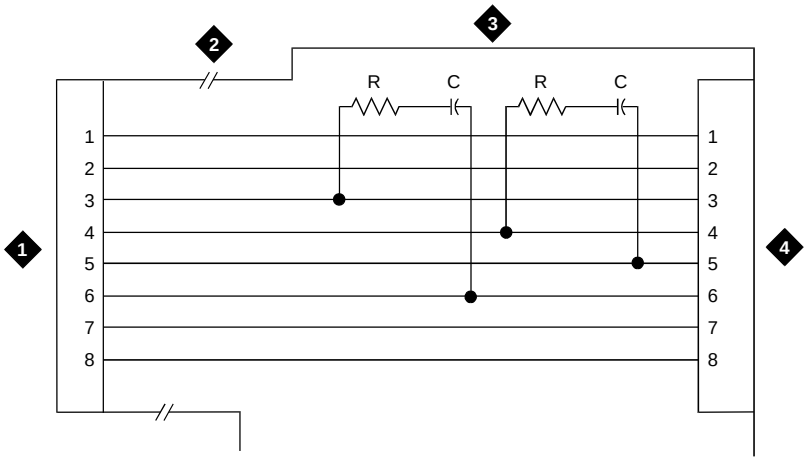


Figure Notes:

[1] 8-Wide Plug

[2] Cord

[3] Plastic Housing

[4] 8-Wide Jack

Terminating Resistor Block (110RA1-12)

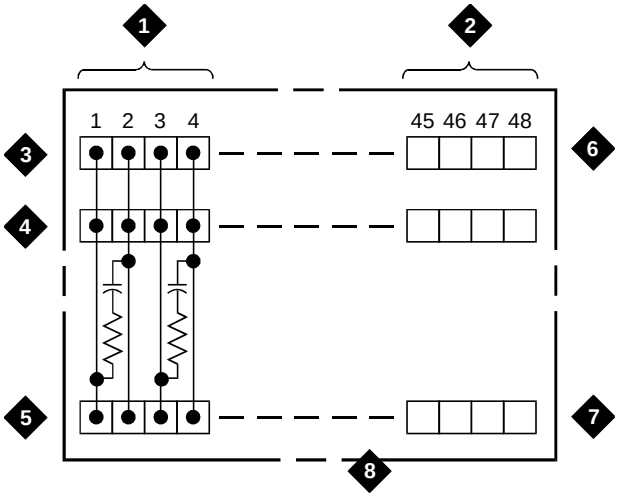


Figure Notes:

[1] Circuit 1

[2] Circuit 12

[3] Output Row A

[4] Output Row B

[5] Input Row C

[6] Only First Circuit Shown to All 12 Circuits (2APR) Per Block

[7] 110D-4 Connector Block

[8] Printed Circuit Board Mounted on Standard 110A or 100APR Block

Typical Installation of Terminating Resistor Block Using Multipoint Connection

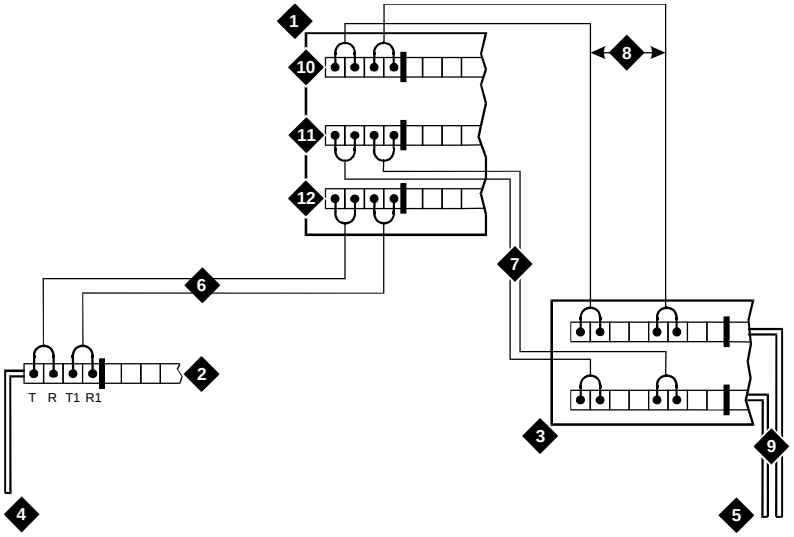


Figure Notes:

[1] Part of Terminating Resistor Block

[2] White or Purple Field

[3] Part of 4-Pair Blue Field

[4] From ISDN T-interface Circuit (2-Pair)

[5] To ISDN S/T-interface Terminals

[6] 2-Pair Cross-Connect

[7] Basic Multi-point Option

[8] 2-Pair Cross-Connect

[9] 4-Pair Horizontal Cables

[10]Row A

[11]Row B

[12]Row C

Installing Multipoint Adapters

Begin

Multipoint adapters are used to provide signal fanout of the T-interface. Fanout can be performed at the work station by the BR851-B Adapter (T-Adapter) or the 367A Adapter. These adapters support more than one ISDN terminal per horizontal 4-pair D-inside wire (DIW). To support multiple horizontal runs, fanout must be performed in the satellite closet by a MDF with multiple common rows. The 110RA1-12 provides fanout for two horizontal runs and contains the 100 Ohm terminating resistor. This can be used for basic multipoint or point-to-point with terminating resistor in the closet. Other fanout blocks include the 110AB1-025M and the 110AB1-050M.

BR851-B Adapter (T-Adapter)

The BR851-B supports two terminals on one multi-point BRI at the work station. It is a T-shaped device used to fanout transmission and power. The BR851-B is an 8-pin device with a single plug and two jacks. See Wiring Diagram of BR851-B.

367A Adapter

The 367A is an 8-conductor adapter used at the work location to bridge 3 to 7 terminals. See Wiring Diagram of 367A Adapter.

Wiring Diagram of BR851-B

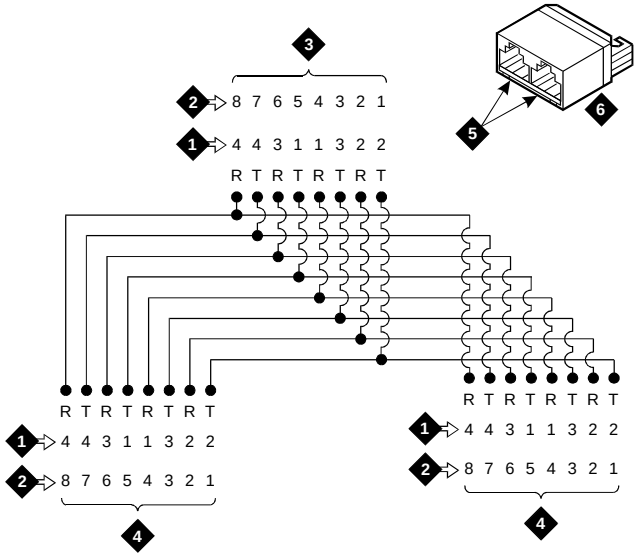


Figure Notes:

[1] Wire Pairs

[2] Pin Numbers

[3] Modular Plug (Male)

[4] Female

[5] Two 8-pin Modular Jacks

[6] T-Type Adapter

Wiring Diagram of 367A Adapter

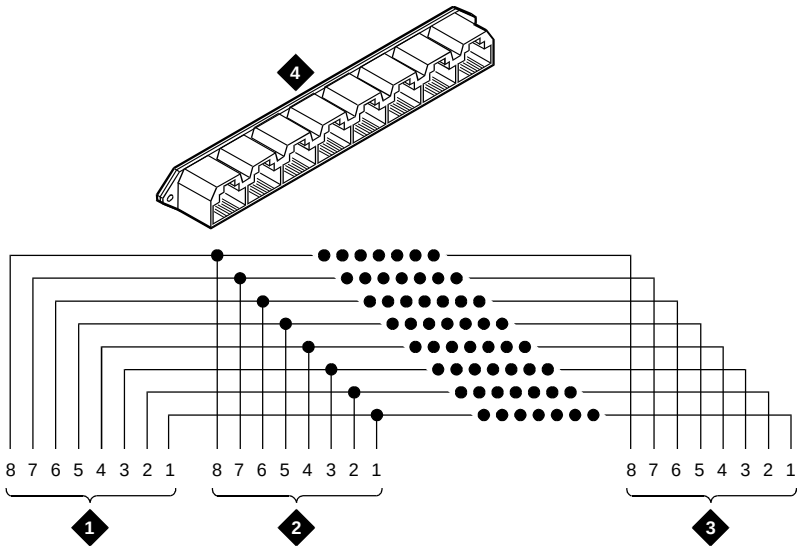


Figure Notes:

[1] Jack 1

[2] Jack 2

[3] Jack 8

[4] 367A Adapter

Basic Multipoint Installation Distances

Basic Multipoint with One Work Location provides cabling information for fanout of ISDN-BRI multipoint installations. In this illustration, the terminating resistor is located in the satellite closet. All distances assume 24 AWG (#5) (0.5 mm^2) D-Inside Wire (DIW).

Basic Multipoint with One Work Location

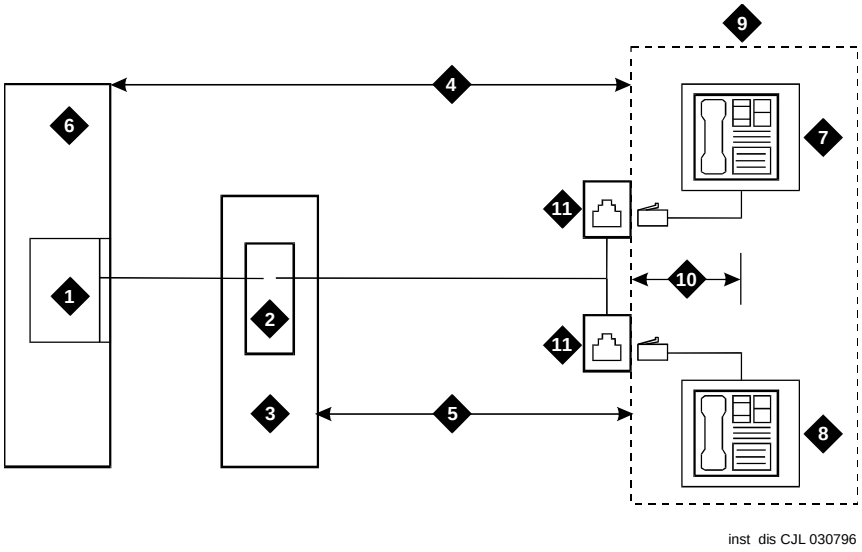


Figure Notes:

[1] S-Interface Source (TN556)

[2] Terminating Resistor

[3] Satellite Closet

[4] Maximum Distance from S-Interface Source to Work Location (1600 Feet) (488 m)

[5] Maximum Distance From Terminating Resistor to Work Location (250 Feet) (76 m)

[6] System Cabinet

[7] Terminating Endpoint 1

[8] Terminating Endpoint 2

[9] Work Location

[10] Maximum Distance from Information Outlet to Terminating Endpoint (33 Feet) (10 m)

[11] Information Outlet

Add Circuit Packs (ISDN BRI)

Begin

Return to Task List

1. Determine port assignments of circuit packs to be added.
2. Install the appropriate circuit packs in assigned cabinet slot (as required).

   Required circuit packs:

   - TN2401 Processor circuit pack
   - TN556 or TN2198 ISDN BRI line circuit pack.
   - TN570/B/C Expansion Interface circuit pack (if EPN present)

Return to Task List

Install Cables (ISDN BRI)

Begin

Return to Task List

Install the cables from the cabinet to the MDF as required.

Note:
A TN556 ISDN BRI requires an 8-port backplane cable terminator (breakout connector); aTN2198 ISDN BRI requires a 12-port backplane cable terminator. Connect the 25-pair cable to the appropriate terminator.

Enter Added Translations (ISDN BRI)

Begin

Return to Task List

Administer the required translation data using the forms listed under 7500D voice terminals and 8500 voice terminals in the *Administrator's Guide for Avaya Communication Manager*.

Resolve Alarms

Begin

Return to Task List

Examine the alarm log. Resolve any alarms using the *Maintenance for Avaya MultiVantage™ DEFINITY Server* documentation.

Save Translations (ISDN BRI)

Begin

Return to Task List

1. If the system is high or critical reliability, type **status system 1** and press **Enter** to verify that the system is in the **active/standby** mode.
2. Type **save translation** and press **Enter**. This instructs the system to take all translation information in memory and write it to the translation cards.
3. If the system contains a TN750/B/C Announcement circuit pack, type **list configuration software-version** and press **Enter**. To restore these announcements, type **restore announcements** and press **Enter**.
4. Update backup cards, if required.

Add a TN2501AP Announcement Circuit Pack

Return to Task List

Note:
To install a TN2501AP, you must ensure the system is enabled for TN2510AP (VAL) boards. If the **Maximum VAL boards** field on the Customer Options screen is set to 0, then you need to obtain and install a new license file before you can install the card.

Installing the pack includes:

1. Verifying the required hardware
2. Installing the TN2501AP circuit pack
3. Configuring the system for the TN2501AP

Verifying the required hardware

Begin

Ensure that you have the required hardware:

- TN2501AP circuit pack
- Backplane adapter
- LAN cable

Installing the TN2501AP circuit pack

Begin

WARNING:
To prevent electrostatic discharge (ESD), be sure to wear a grounding strap while handling the circuit pack.

1. Remove connector (if any) from the back of the switch cabinet corresponding to the TN2501AP circuit pack slot.
2. Insert the circuit pack into any port slot and close the latch securely.

At first, both the red and green LEDs are on steady, then the green LED flashes. If there are announcements on the circuit pack, the amber LED flashes while the announcements are copied from FLASH to RAM. After approximately 3-5 minutes, all of the top 3 LEDs go out, although this time is longer if there are announcements already recorded on the circuit pack.

Note:

If the TN2501AP or TN750 circuit packs are at the system limit and you insert a VAL circuit pack, the red LED on that circuit pack stays on, indicating that the system does not accept it.

3 Connect the Backplane Adapter to the Amphenol connector on the back of the switch cabinet, corresponding to the TN2501AP circuit pack slot.

4 Connect the LAN cable to the RJ-45 connector on the Backplane Adapter.

Configuring the system for the TN2501AP

Begin

1 At the SAT, type **list configuration board *board-location*** and press **Return**.

The System Configuration report appears. Use this report to ensure that the switch recognizes the TN2501AP circuit pack after it is latched in the carrier slot.

2 Verify the following field values:

- Board Type shows **VAL-ANNOUNCEMENT**
- Code is **TN2501AP**

3 At the SAT, type **change node-names ip** and press **Return**.

The IP Node Names screen appears. Use this screen to administer the circuit pack's node name.

4 Type a unique name in the **Name** field.

This name is recognized only within the switch, and does not need to match the node name on your network.

5 Enter the **IP Address**.

You can get this information from the network manager.

6 Press **Enter** to save the changes.

7 Type **change ip-interfaces** and press **Return**.

The IP Interfaces screen appears. Use this screen to administer an IP interface, which associates the circuit pack with an IP address.

8 Set the **Enable Eth Pt** field to **y**.

9 Set the **Type** field to **VAL**.

10 Type the circuit pack location in the **Slot** field (UUCSS).

If a TN2501AP circuit pack is not at this location when you submit the screen, the system prompts you to enter a VAL circuit pack location.

11 In the **Node Name** field, enter the Node Name you entered in step 4.

If you press Help, a list of administered node names appears (including the name you administered with the change node-names ip command), and you can select from the list.

12 Set the **Subnet Mask** field according to your network requirements.

Gateway Address is usually the same as the TN2501AP circuit pack's IP address, usually with the fourth octet changed. Be sure to set this address according to your network requirements.

13. Press **Enter** to save the changes.
14. Type **add data-module *extension*** and press **RETURN**.

    The Data Module screen appears. Use this screen to administer the data module that is associated with the TN2501AP ethernet port.
15. Set the **Type** field to **ethernet**.
16. Set the **Port** field to correspond to the circuit pack location.

    The port number (final two digits) is always **33** for the TN2501AP circuit pack.
17. Set the **Link** field to an unassigned or next-available link number.
18. Set the **Network uses 1's for Broadcast Address** field according to the your network requirements.
19. Type a unique name in the **Name** field.
20. Press **Enter** to save your changes.
21. If your system uses IP routing, type **add ip-route** and press **Return**.
22. Administer IP routes to the TN2501AP circuit pack and press **Enter** to save your changes.
23. Use the **ping** and **status link** commands to test the new IP connections that you have administered.

Add Multiple Announcement

Return to Task List

TN750C and TN2501AP circuit packs are required if the system has more than one announcement circuit pack. No more than 1 TN750 or TN750B can reside in the system. The TN750C or TN2501AP can install in any port or service (TDM) slot, and need not reside in a control carrier for extra power holdovers.

Note:
Do not copy or restore announcements from a TN750C to a TN750 or TN750B circuit pack, as this process may corrupt the announcement data.

This section provides information on

- TN750C Announcement Circuit Pack
- TN2501AP Announcement Circuit Pack
- Save and Restore Recorded Announcements
- TN750 and TN750B Announcement Circuit Packs
- Task List: Add Multiple Announcement Circuit Packs

TN750C Announcement Circuit Pack

The TN750C circuit pack contains on-board flash memory which provides internal backup of announcements on the circuit packs. Thus, the TN750C circuit pack does not need the save and restore processes. However, you can use the save and restore processes to copy announcements from the TN750 or TN750B to a TN750C circuit pack.

The TN750C circuit pack can replace a TN750 or TN750B circuit pack. The difference in operation is that the TN750C circuit pack automatically restores and reports the availability of announcements from its own internal flash memory in 5 minutes, rather than the approximately 40 minutes for the TN750 or TN750B circuit pack reporting from the mass-storage system.

If a circuit pack already has announcements in its flash memory, the yellow LED flashes as the announcements copy to the Voice RAM.

TN2501AP Announcement Circuit Pack

The TN2501AP integrated announcement circuit pack

- offers up to 1 hour of announcement storage capacity.
- requires shorter backup and restore times.
- is firmware downloadable.
- plays announcements over the TDM bus, similar to the TN750C.
- has 33 ports, including
  - 1 dedicated telephone port for recording and playing back announcements (port number 1).
  - 1 ethernet port (port number 33).
  - 31 playback ports (ports 2–32).
- 10/100 Mb ethernet interface, allowing announcement and firmware file portability over your LAN (FTP server functions).
- supports .wav announcement files (see Important File Specifications).
- works in r, si, csi, DEFINITY ONE, and Avaya IP600 models.

Important File Specifications

Voice Announcement over LAN (VAL) requires that announcement files are in the following .wav formats:

- CCITT A-Law or CCITT μ-Law companding format (do not use PCM)
- 8KHz sample rate
- 8-bit resolution (bits per sample)
- Mono (channels = 1)

You must convert other wave (.wav) file formats to those listed above. Telephone access creates the correct file formats.

Save and Restore Recorded Announcements

CAUTION:
If the yellow LED is on, do not remove the circuit pack. This will corrupt the announcement data.

The syntax for saving from any TN750 circuit pack is **save announcements** [from PCSS] and press **Enter**. Where P is the port network number (1 for PPN, and 2-4 for EPN), C is the carrier designation (A, B, C, D, or E), and SS is the number of the slot in which the circuit pack resides (01 to 21).

The syntax for restoring to a TN750C circuit pack is **restore announcements** [disk | removable media [to PCSS]] and press **Enter**. Where P is the port network number (1 for PPN, and 2-4 for EPN), C is the carrier designation (A, B, C, D, or E), and SS is the number of the slot in which the circuit pack resides (01 to 21). When executing a

restore command and there are existing announcements on the circuit pack, the following warning message appears:

WARNING:
This restore announcement command will overwrite the existing announcements on the specified board.

After 5 minutes (with no alterations to the announcements), the TN750C automatically copies the announcements from the Voice RAM to the internal flash memory. The yellow LED on the front of the TN750C flashes.

You can only save the announcement contents of 1 circuit pack to mass storage at a time. For the contents of every circuit pack, save to separate translation cards. Label each card to match the circuit pack saved to it.

TN750 and TN750B Announcement Circuit Packs

Note:
The following save and restore procedures are only necessary for TN750 and TN750B announcement circuit packs.

The recorded announcements in the system can be saved on the mass-storage system by typing **save announcements spe-active/spe-standby** and pressing **Enter**. These commands should only be used after business hours or when the system is operating during a low-usage period. The system takes about 40 minutes to transfer the recorded announcements from the announcement circuit pack to the mass-storage system. During this time period, the management terminal cannot be used to administer the system until the transfer finishes; however, all other administration terminals, if provided, are allowed to perform administration procedures.

The recorded announcements in the system can be restored to system memory from the translation card by entering the **restore announcements** command.

Task List: Add Multiple Announcement Circuit Packs

- Replace a TN750 or TN750B with a TN750C or Move all Announcements from a TN750B to a TN750C
- Add additional TN750C Circuit Packs
- Add a TN2501AP Announcement Circuit Pack
- Move a Single Announcement from one Announcement Circuit Pack to another

Replace a TN750 or TN750B with a TN750C or Move all Announcements from a TN750B to a TN750C

Begin

Return to Task List

Note:
Do not copy or restore announcements from a TN750C to a TN750 or TN750B circuit pack, as this may corrupt the announcement data.

1. Save announcements from the TN750/B to the mass-storage system.
2. Insert the TN750C circuit pack into a vacant slot of a carrier.

   Any carrier is acceptable since power holdover is not a concern.

3. Lift the locking lever upward until the latch pin engages.
4. Administer a new data module on the TN750C circuit pack, as described in *Administrator's Guide for Avaya Communication Manager*.
5. Type **restore announcements** and press **Enter** to the TN750C circuit pack equipment location.
6. Wait until announcements copy from voice RAM to flash memory (yellow LED on the TN750C stops flashing). This may take about 10 minutes.
7. Type **busyout board *01c11*** and press **Enter** for the TN750/B circuit pack, where "01c11" is an example circuit pack location.
8. Type **change integrated announcements** and press **Enter**.

   This modifies the translations for the TN750B circuit pack to reference the TN750C circuit pack.
9. Verify proper playback of the announcements from the TN750C circuit pack by calling them.
10. Type **release board *01c11*** and press **Enter** for the TN750/B circuit pack, where "01c11" is an example circuit pack location.

Return to Task List

Add additional TN750C Circuit Packs

Begin

Return to Task List

1. Install the TN750C into a vacant slot in a carrier.

   Any carrier is acceptable since power holdover is not a concern.
2. Administer a new data module on the TN750C circuit pack, as described in *Administrator's Guide for Avaya Communication Manager*.
3. Type **change announcements** and press **Enter** to administer new announcements to that TN750C slot. Fill in the "designated board location" field for the circuit pack's location.
4. Record the announcements, as described in *Administrator's Guide for Avaya Communication Manager*.
5. Wait until the announcements copy from voice RAM to the on-board flash memory (the yellow LED on the TN750C starts and then stops flashing). This may take about 10 minutes.

Return to Task List

Move a Single Announcement from one Announcement Circuit Pack to another

Begin

Return to Task List

1. Type **change announcements** and press **Enter** to change the circuit pack locations of a particular announcement. You may also change the compression rate at this time.
2. Rerecord the announcement, as described in *Administrator's Software for Avaya Communication Manager*.

Add Speech Synthesis

Begin

Return to Task List

The Speech Synthesizer circuit pack is required when the Voice Message Retrieval, Automatic Wakeup, or Do Not Disturb features are activated. The circuit pack does not require administration.

1. Determine the port assignment of the Speech Synthesizer circuit pack to be added.
2. Install the Speech Synthesizer circuit pack in the designated carrier slot.

Add Code Calling Access

Begin

Return to Task List

The tones for the Code Calling feature are generated by the Tone-Clock circuit packs in the port networks.

1. Install a TN763B/C/D (or TN417) Auxiliary Trunk circuit pack or a Speech Synthesizer circuit pack and connect for Loudspeaker Paging. The Code Calling Access feature shares the same ports as Loudspeaker Paging. An Auxiliary Trunk circuit pack provides 4 ports for Loudspeaker Paging and Code Calling Access.
2. Administer the form listed under “Code Calling Access” in the *Administrator’s Guide for Avaya Communication Manager*.

Add CallVisor ASAI

Return to Task List

Note:
Adding CallVisor ASAI requires a service interruption when you add packet bus support and you install TN570 circuit packs as part of that support. Give the customer advance notice of the scheduled addition. See Add Packet Bus Support for further information.

Task List: Add CallVisor ASAI

- Deliver License File (CallVisor ASAI)
- Save Translations (CallVisor ASAI)
- Add Packet Bus Support if it is not already installed
- Add Circuit Packs (CallVisor ASAI)
- Install Cables (CallVisor ASAI)
- Enter Added Translations (CallVisor ASAI)
- Resolve Alarms (CallVisor ASAI)
- Save Translations (CallVisor ASAI)

Deliver License File (CallVisor ASAI)

Begin

Return to Task List

CAUTION:
This procedure must be done immediately after you upgrade the software. If the license file is not installed within 10 days, the switch enters a No-License mode and shuts down all call processing.

New Duplicated G3r installations only

1. Retrieve the RFA License File with both serial numbers from the RFA Application.
2. Type **set time** and press **Enter**.

   Ensure that the system date and time are set correctly.
3. Use one of these installation methods:
   - ~ Direct connection between the switch and RFA
   - ~ No connection between the switch and RFA
4. Type **save translation** and press Enter.

   After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.
5. Type **reset system 4** and press Enter.

   Wait until the system has completely reset before continuing.
6. Type **change cabinet 1** and press Enter.

   In the `Carrier Type` column change the “B” carrier to **processor** and submit the form.
7. Type **change system-parameters duplication** and press Enter.

   Set the `Enable Operation of SPE Duplication` field to **y** and submit the form.
8. Type **save translation** and press Enter.

   After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.
9. Type **reset system 3 preserve-license** (or **reset system 3 no-preserve-license**, since the License File has been saved in translations) and press Enter.

New simplex and upgraded G3r only

1. Type **save translation** and press **Enter**.

   After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.
2. Type **reset system 3** and press **Enter**.

   Wait until the system has completely reset before continuing.
3. If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.

   This disconnects (unregisters) all IP endpoints.
4. Type **set time** and press **Enter**.

   Ensure that the system date and time are set correctly.
5. Use one of these installation methods:
   - ~ Direct connection between the switch and RFA

~ No connection between the switch and RFA

New or upgraded G3si only

1. Retrieve the RFA License File with both serial numbers from the RFA Application.
2. If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.

   This disconnects (unregisters) all IP endpoints.
3. Type **set time** and press Enter.

   Ensure that the system date and time are set correctly.
4. For *duplicated systems only* type **status system all** and press Enter.

   Ensure that the standby SPE is *not* in the maintenance state. If it is, wait for the maintenance state to finish.
5. Use one of these installation methods:
   ~ Direct connection between the switch and RFA
   ~ No connection between the switch and RFA

Direct connection between the switch and RFA

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

Note:
This procedure sends the License File to the switch and installs it.

2. If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

   This re-registers the IP endpoints.

No connection between the switch and RFA

1. Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.
2. Open the License Installation Tool (LIT) application at your laptop/PC.
3. Use the LIT instructions to add a switch connection profile to the tool.
4. Use the LIT instructions to install the License File on the switch.
5. If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

   This re-registers the IP endpoints.

CAUTION:

Save Translations (CallVisor ASAI)

Begin

Return to Task List

1. If the system is high or critical reliability, type **status system 1** and press **Enter** to verify that the system is in the **active/standby** mode.
2. Type **save translation** and press **Enter**. This instructs the system to take all translation information in memory and write it to the translation cards.

Add Circuit Packs (CallVisor ASAI)

Begin

Return to Task List

1. Determine port assignment of circuit packs to be added.
2. Install the appropriate circuit packs in assigned cabinet slot (as required).

Note:
A vacant port is required on a TN556/B ISDN—BRI circuit pack.

Return to Task List

Install Cables (CallVisor ASAI)

Begin

Return to Task List

Install cables from cabinet to the MDF as required.

Enter Added Translations (CallVisor ASAI)

Begin

Return to Task List

Administer the required translation data using the forms listed under “Adjunct/Switch Applications Interface (ASAI)” in the *Administrator’s Guide for Avaya Communication Manager*.

Resolve Alarms (CallVisor ASAI)

Begin

Return to Task List

Examine the alarm log. Resolve any alarms that may exist using the *Maintenance for Avaya MultiVantage DEFINITY Server* documentation for your system.

Save Translations (CallVisor ASAI)

Begin

Return to Task List

1. If the system is high or critical reliability, type **status system 1** and press **Enter** to verify that the system is in the **active/standby** mode.
2. Type **save translation** and press **Enter**. This instructs the system to take all translation information in memory and write it to the translation cards.
3. Update backup translation cards, if required.

Add Packet Bus Support

Return to Task List

You may need to add packet bus support when adding ISDN - BRI or CallVisor ASAI port circuit packs.

Note:
Installing TN570 expansion interface circuit packs as part of adding packet bus support requires a service interruption. Give the customer advance notice of the scheduled addition.

Task List: Add Packet Bus Support

- Disable Alarm Origination (Packet Bus Support)
- Save Translations (Packet Bus Support)
- Power Down Cabinet (Packet Bus Support)
- Install Circuit Packs (Packet Bus Support)
- Power Up System (Packet Bus Support)
- Test the Packet Bus and C-LAN Circuit Pack (Packet Bus Support)
- Resolve Alarms (Packet Bus Support)
- Enable Scheduled Maintenance and Alarm Notification (Packet Bus Support)
- Save Translations (Packet Bus Support)

If installing TN570 Expansion Interface circuit packs as part of adding packet bus support, then service is interrupted. Notify the customer in advance as to when the addition will be carried out.

If *not* installing TN570 circuit packs, then service is not interrupted and you can skip to Install Circuit Packs (Packet Bus Support)

Disable Alarm Origination (Packet Bus Support)

Begin

Return to Task List

1. Type **change system-parameters maintenance** and press **Enter**.
2. Set the **Alarm Origination Activated** field to **n**.

CAUTION:
If you do not disable Alarm Origination, the system may generate alarms, resulting in unnecessary trouble tickets.

3. For some releases of software, disable **Cleared Alarm Notification** and **Restart Notification** before submitting the form.

Return to Task List

Save Translations (Packet Bus Support)

Begin

Return to Task List

If standard reliability:

1. Type **status system 1** and press **Enter** to verify that the system is in the **active/standby** mode.

If high or critical reliability:

1. Type **status system 1** and press **Enter** to verify that the system is in the **active/standby** mode.

2. Type **save translation** and press **Enter**. This instructs the system to take all translation information in memory and write it to the translation card.
3. If the system contains a TN750/B Announcement circuit pack, type **display announcements** and press **Enter**. If administered recorded announcements are listed, type **list configuration software-version long** and press **Enter**. To save the announcements, type **save announcements** and press **Enter**.

Return to Task List

Power Down Cabinet (Packet Bus Support)

Begin

Return to Task List

1. At the PPN, set the main circuit breaker to OFF.
2. At an EPN, set the main circuit breaker to OFF.

Install Circuit Packs (Packet Bus Support)

Begin

Return to Task List

Install the appropriate circuit packs. See Circuit Pack Locations for Packet Bus in PPN.

Circuit Pack Locations for Packet Bus in PPN

Circuit Pack	Carrier	Quantity	Slot
TN570	Control Carrier A	1 or 2[1]	EXPN INTFC/1 and /2
	Control Carrier B (if duplicated)	1 or 2	EXPN INTFC/1 and /2
TN771C	Control Carrier A	1[2]	Any available port slot

1.Quantity of this pack should equal the number of EPNs.
2.Required for critical-reliability EPNs and PPN. Optional for digital trunk testing in high-reliability PPN.

Power Up System (Packet Bus Support)

Begin

Return to Task List

1. At the EPN, set the main circuit breaker to ON.
2. At the PPN, set the main circuit breaker to ON.
3. The system performs a level 4 reboot, loading the system translations from the translation cards. Rebooting takes about 10 minutes.
4. After all trouble is cleared, verify the EMERGENCY TRANSFER CONTROL switch is set to AUTO. This restores the system to the normal mode.

Return to Task List

Deliver or install the License File (Packet Bus Support)

Begin

Return to Task List

CAUTION:
This procedure must be done immediately after you upgrade the software. If the license file is not installed within 10 days, the switch enters a No-License mode and shuts down all call processing.

New Duplicated G3r installations only

1. Retrieve the RFA License File with both serial numbers from the RFA Application.
2. Type **set time** and press **Enter**.

   Ensure that the system date and time are set correctly.
3. Use one of these installation methods:
   - ~ Direct connection between the switch and RFA
   - ~ No connection between the switch and RFA
4. Type **save translation** and press Enter.

   After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.
5. Type **reset system 4** and press Enter.

   Wait until the system has completely reset before continuing.
6. Type **change cabinet 1** and press Enter.

   In the `Carrier Type` column change the “B” carrier to **processor** and submit the form.
7. Type **change system-parameters duplication** and press Enter.

   Set the `Enable Operation of SPE Duplication` field to **y** and submit the form.
8. Type **save translation** and press Enter.

   After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.
9. Type **reset system 3 preserve-license** (or **reset system 3 no-preserve-license**, since the License File has been saved in translations) and press Enter.

New simplex and upgraded G3r only

1. Type **save translation** and press **Enter**.

   After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.
2. Type **reset system 3** and press **Enter**.

   Wait until the system has completely reset before continuing.
3. If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.

   This disconnects (unregisters) all IP endpoints.
4. Type **set time** and press **Enter**.

Ensure that the system date and time are set correctly.

5 Use one of these installation methods:

~ Direct connection between the switch and RFA

~ No connection between the switch and RFA

New or upgraded G3si only

1 Retrieve the RFA License File with both serial numbers from the RFA Application.

2 If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.

This disconnects (unregisters) all IP endpoints.

3 Type **set time** and press Enter.

Ensure that the system date and time are set correctly.

4 For *duplicated systems only* type **status system all** and press Enter.

Ensure that the standby SPE is *not* in the maintenance state. If it is, wait for the maintenance state to finish.

5 Use one of these installation methods:

~ Direct connection between the switch and RFA

~ No connection between the switch and RFA

Direct connection between the switch and RFA

1 Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

Note:

This procedure sends the License File to the switch and installs it.

2 If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

This re-registers the IP endpoints.

No connection between the switch and RFA

1 Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.

2 Open the License Installation Tool (LIT) application at your laptop/PC.

3 Use the LIT instructions to add a switch connection profile to the tool.

4 Use the LIT instructions to install the License File on the switch.

5 If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

This re-registers the IP endpoints.

CAUTION:

Return to Task List

Test the Packet Bus and C-LAN Circuit Pack (Packet Bus Support)

Begin

Return to Task List

Type **test packet port-network 1 long** and press **Enter**. For more detail about these tests, refer to the **test pkt** command section in the appropriate maintenance book.

Resolve Alarms (Packet Bus Support)

Begin

Return to Task List

1. Type **display alarms** and press **Enter**.
2. Examine the alarm log.
3. Resolve alarms using the appropriate maintenance book.

Enable Scheduled Maintenance and Alarm Notification (Packet Bus Support)

Begin

Return to Task List

1. Type **change system-parameters maintenance** and press **Enter**.
2. Enable the scheduled daily maintenance.
3. If you changed the **Start Time** or **Stop Time** field, change it back to the original time.
4. Re-enable alarm notification.
5.

Save Translations (Packet Bus Support)

Begin

Return to Task List

1. If the system is high or critical reliability, type **status system 1** and press **Enter** to verify that the system is in the **active/standby** mode.
2. Type **save translation** and press **Enter**. This instructs the system to take all translation information in memory and write it to the translation cards.
3. If the system contains a TN750/B/C Announcement circuit pack, type **restore announcements** and press **Enter**.
4. Update backup cards, if necessary.

Add DCS Interface

Return to Task List

This section includes general information on adding the DCS interface and the Task List: Add DCS.

Systems in a Distributed Communications System (DCS) network are interconnected by both tie trunks (for voice communications) and data links (for control and transparent feature information). These data links, also called DCS signaling links, support the feature transparency.

Various subsets (depending on the specific configuration) of DS1 Interface circuit packs provide the voice-communications interface. The TN799x Control LAN (C-LAN) circuit pack provides the data link interface (between the processor and the physical signaling link).

In some configurations, the TN799x passes the signaling information over a separate ethernet network (usually via a hub) to adjuncts applications such as CMS, Intuity, and DCS Networking. The C-LAN circuit pack has one Ethernet connection and up to 16 DS0 physical interfaces for PPP connections. In addition to the ethernet functionality, C-LAN extends the ISDN capabilities by providing packet bus access. For use with an ethernet network, connect the appropriate pins of the I/O field to the hub. For pinouts and diagrams, refer to Connector and Cable Diagrams (Pinout Charts).

In other configurations, the TN799x circuit pack carries signaling over point-to-point protocol (PPP) for subsequent inclusion (via the switching fabric) in the same DS1 bitstream as the DSC voice transmissions.

A remote socket control link (RSCL) links the C-LAN and the SPE to pass call control and other management information. Because one link serves all the ports on the circuit pack, RSCL maintenance is part of the C-LAN circuit pack maintenance.

For further information about DCS, refer to the *Administration for Network Connectivity for Avaya Communication Manager.*

Task List: Add DCS

- Install Cables (Add DCS)
- Add Circuit Packs (Add DCS)
- Test the External Connection to the LAN (Add DCS)
- Deliver License File (Add DCS)
- Administer DCS (Add DCS)
- Save Translations (Add DCS)

Return to Task List

Install Cables (Add DCS)

Begin

Return to Task List

Install cable from the cabinet to a hub or Internet Protocol (IP) Switch as required. See Cable Connection for C-LAN. For a pinout of TN799x, see TN799x Pinout.

From the rear of the cabinet:

1 Connect the 259A connector to the backplane connector corresponding to the TN799x slot.

2 Connect one end of the CAT5 cable to the 259A connector. Connect the other end to the customer's network.

Cable Connection for C-LAN

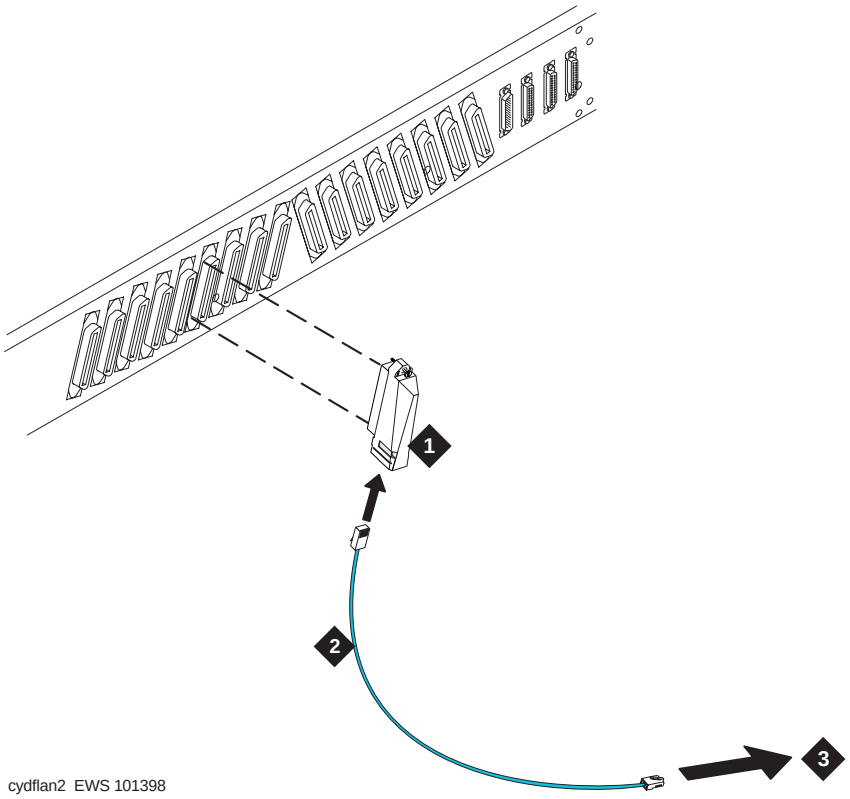


Figure Notes:

[1] 259A Connector

[2] DW8A Cable

[3] Hub or IP Switch

TN799x Pinout			
Backplane Pin	**25-Pair Wire Color**	**Lead Name**	**Peripheral Connector Pin**
103	White/Orange	TD+	27
003	Orange/White	TD-	2
104	White/Green	RD+	28
004	Green/White	RD-	3

Return to Task List

Add Circuit Packs (Add DCS)

Begin

Return to Task List

Determine the port assignments of the circuit packs to be added. If there are no available port slots in the processor cabinet for the C-LAN circuit pack, place it in an EPN cabinet port slot.

CAUTION:
When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

Note:
The TN799x circuit pack is hot-swappable, so you do not need to power down the carrier to install it.

Insert the TN799x circuit pack into the port slot identified earlier.

Return to Task List

Test the External Connection to the LAN (Add DCS)

Begin

Return to Task List

To test the external IP connections, ping the C-LAN server and ping a known computer connected to your network. If everything is configured correctly, the **Result** column on the Ping Results screen reads **pass**. If it reads **abort**, verify the IP-address information and check the connectivity, including the cabling.

1. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable ***nnn.nnn.nnn.nnn*** is the IP address of the TN799x C-LAN circuit pack and ***UUCSS*** is the cabinet, carrier, and slot of the TN799x C-LAN circuit pack.
2. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable ***nnn.nnn.nnn.nnn*** is the IP address of the customer's gateway and ***UUCSS*** is the cabinet, carrier, and slot of the TN799x C-LAN circuit pack.
3. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable ***nnn.nnn.nnn.nnn*** is the IP address of another computer beyond the gateway and ***UUCSS*** is the cabinet, carrier, and slot of the TN799x C-LAN circuit pack.

The TN799x C-LAN circuit pack is now installed in the DEFINITY carrier and connected to the IP network.

Return to Task List

Deliver License File (Add DCS)

Begin

Return to Task List

CAUTION:
This procedure must be done immediately after you upgrade the software. If the license file is not installed within 10 days, the switch enters a No-License mode and shuts down all call processing.

New Duplicated G3r installations only

1. Retrieve the RFA License File with both serial numbers from the RFA Application.
2. Type **set time** and press **Enter**.

   Ensure that the system date and time are set correctly.
3. Use one of these installation methods:

   ~ Direct connection between the switch and RFA

- ~ No connection between the switch and RFA

4 Type **save translation** and press Enter.

After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.

5 Type **reset system 4** and press Enter.

Wait until the system has completely reset before continuing.

6 Type **change cabinet 1** and press Enter.

In the `Carrier Type` column change the “B” carrier to **processor** and submit the form.

7 Type **change system-parameters duplication** and press Enter.

Set the `Enable Operation of SPE Duplication` field to **y** and submit the form.

8 Type **save translation** and press Enter.

After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.

9 Type **reset system 3 preserve-license** (or **reset system 3 no-preserve-license**, since the License File has been saved in translations) and press Enter.

New simplex and upgraded G3r only

1 Type **save translation** and press **Enter**.

After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.

2 Type **reset system 3** and press **Enter**.

Wait until the system has completely reset before continuing.

3 If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.

This disconnects (unregisters) all IP endpoints.

4 Type **set time** and press **Enter**.

Ensure that the system date and time are set correctly.

5 Use one of these installation methods:

- ~ Direct connection between the switch and RFA
- ~ No connection between the switch and RFA

New or upgraded G3si only

1 Retrieve the RFA License File with both serial numbers from the RFA Application.

2 If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.

This disconnects (unregisters) all IP endpoints.

3 Type **set time** and press Enter.

Ensure that the system date and time are set correctly.

4 For *duplicated systems only* type **status system all** and press Enter.

Ensure that the standby SPE is *not* in the maintenance state. If it is, wait for the maintenance state to finish.

5 Use one of these installation methods:

~ Direct connection between the switch and RFA

~ No connection between the switch and RFA

Direct connection between the switch and RFA

1 Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

Note:

This procedure sends the License File to the switch and installs it.

2 If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

This re-registers the IP endpoints.

No connection between the switch and RFA

1 Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.

2 Open the License Installation Tool (LIT) application at your laptop/PC.

3 Use the LIT instructions to add a switch connection profile to the tool.

4 Use the LIT instructions to install the License File on the switch.

5 If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

This re-registers the IP endpoints.

CAUTION:

Administer DCS (Add DCS)

Begin

Return to Task List

1 Administer the required translation data using the screens listed under Distributed Communications System (DCS) in the *Administrator’s Guide for Avaya Communication Manager*.

Save Translations (Add DCS)

Begin

Return to Task List

1 If the system is high- or critical-reliability, type **status spe** and press **Enter** to verify that the standby SPE is refreshed and that the standby disk is in service.

2 Type **save translation [spe-a or both] disk** and press **Enter**. This command instructs the system to take all translation information in memory and write it to the disk(s).

Administer TN464GP/TN2464BP with Echo Cancellation

Return to Task List

This section provides information about the TN464GP and TN2464BP circuit packs with echo cancellation and the procedure to Administer TN464GP/TN2464BP.

The TN464GP and TN2464BP circuit packs with echo cancellation are intended for DEFINITY customers who are likely to encounter echo over circuits connected to the Direct Distance Dialing (DDD) network. These circuit packs are intended for channels supporting voice; therefore, they support the following trunks: CAS, CO, DID, DIOD, DMI, FX, Tie, WATS. They do not support any data trunk groups.

Note:
The P suffix designation means the circuit pack is programmable; new firmware can be downloaded directly to the circuit pack. For more information, see Upgrade Firmware on Programmable Circuit Packs.

The TN464GP and TN2464BP circuit packs are backwards compatible, although the echo cancellation feature can be used only with Release 1.1 or later of Avaya™ Communication Manager and after the feature is enabled.

The echo cancellation feature cancels echoes with delays up to 96 ms. Echo cancellation is disabled automatically when the circuit pack detects a 2100-Hz *phase-reversed* tone put out by high-speed modems (56 kbaud) but not when it detects a 2100-Hz *straight* tone generated by low-speed modems (9.6 kbaud).

For information on installing port circuit packs, see Add Port Circuit Packs. For information on setting the option switches, see Option Switch Settings.

Echo cancellation must first be purchased, then added to the system via a new License File.

Return to Task List

Administer TN464GP/TN2464BP

Begin

Note:
You do not need to busyout the circuit packs to modify the settings. But the modified settings do not take effect until either the port is busied out or the scheduled maintenance runs.

1. Type **display system-parameters customer-options** and press **Enter**. On screen 2 verify that the **DS1 Echo Cancellation?** field is set to **y**. If not, contact your representative as this must be set by the license file.
2. Type **[add | change] trunk-group [next | number]** and press **Enter**. See Trunk Features screen.
3. On Trunk Features, screen 2, set the **DS1 Echo Cancellation?** field to **y**.
4. Type **[add | change] ds1 *UUCSS*** and press **Enter**. See DS1 Circuit Pack screen.
5. On the DS1 Circuit Pack screen, set the **Echo Cancellation?** field to **y**.

   When set to **y**, 2 new fields display: **EC Direction:** and **EC Configuration:**.

   ~ If you know the echo is coming into DEFINITY, keep the default setting for the **EC Direction:** field of **inward**.

- If you know that the distant party is hearing echo that originates in DEFINITY or its line side stations or equipment, set the **EC Direction:** field to **outward**.
- Keep the default setting for the **EC Configuration:** field of **4**. This setting minimizes extremely strong echo, very hot signals, or excessive clipping or breakup of speech from a distant party. It reduces speech clipping but may allow slight residual echo or more background noise.

6. Test the voice quality on a telephone connected through the TN464GP or TN2464BP circuit packs and known to have echo to see if the echo was eliminated.
7. If the echo still exists, set the **EC Configuration:** field to **1**, **2**, or **3**, then test the voice quality. These settings provide help for the following scenarios:
   - Setting 1 rapidly minimizes echo when first detected, regardless of the loudness of the talker's voice. Settings 1 and 4 have the same EC settings except that Setting 1 introduces 6 dB of loss.
   - Setting 2 minimizes speech clipping, but it takes a fraction of a second longer for the echo to fade.
   - Setting 3 eliminates speech clipping, but a strong echo may take 2 or 3 seconds to fade.
8. If after trying all these settings, the echo still exists, contact technical support. For telephone numbers, go to Avaya Support Centre and select **ONLINE SERVICES**, then select **- Contact Us**.

Trunk Features screen

```
add trunk-group next                                Page   2 of 11   SPE A
                           TRUNK FEATURES

             ACA Assignment? n                        Measured: both
             Internal Alert? n                Maintenance Tests? y
           Data Restriction? n
             Glare Handling: none

               Used for DCS? n
      Suppress # Outpulsing? n
Seize When Maintenance Busy: neither-end



Incoming Tone (DTMF) ANI: no              Per Call CPN Blocking Code:
         Connected to CO? n             Per Call CPN Unblocking Code:

                                              Ds1 Echo Cancellation? y
```

DS1 Circuit Pack screen

```
add ds1 2b08                                    Page   1 of 1   SPE B

                                DS1 CIRCUIT PACK

            Location: 02B08                      Name: Echo Cancel t23
            Bit Rate: 2.048               Line Coding: hdb3

      Signaling Mode: CAS

        Interconnect: pbx            Country Protocol: 1

Interface Companding: mulaw                      CRC? n
           Idle Code: 11111111



      Slip Detection? y             Near-end CSU Type: other

   Echo Cancellation? y
        EC Direction: inward
    EC Configuration: 1
```

Return to Task List

Add IP Solutions

Avaya offers several IP solutions for customers, including the Avaya R300 Remote Office Communicator. For information on the Avaya R300, refer to the *Avaya MultiVantage™ DEFINITY and S8100 Library CD*.

The Avaya Media Gateway IP Media Processor allows you to send voice and fax from the Avaya Media Gateway through an Internet protocol (IP) network to other Avaya Media Gateways having this feature or to other H.323 V2 compliant endpoints. It is implemented using either the TN802B IP Interface Assembly, which is a Windows NT server residing on the IP Interface Assembly or the TN2302AP Media Processor.

Note:
The P board suffix designation means the circuit pack is programmable, see Upgrade Firmware on Programmable Circuit Packs for more information.

Task List: Implementing Avaya Media Gateway IP Solutions

Avaya Media Gateways are implemented in these ways:

- Installing a TN2302AP IP Media Processor, including
  - ~ Upgrading TN802 IP Trunking to TN2302AP IP Media Processor
  - ~ Upgrading a TN802B IP Interface Assembly to TN2302AP IP Media Processor
- Installing a TN802B in Media Processor Mode
- Installing a TN802B in IP Trunk Mode
- Upgrading a TN802 V3 (or later) to a TN802B (MedPro Mode)

TN802B IP Interface Assembly

The IP Interface is an assembly composed of a TN802B circuit board, a processor card, and DSP resource card. For ordering purposes, the assembly is identified as a J58890MA-1 L30, but for simplicity, we refer to it in this section as the TN802B IP Interface.

The TN802B IP Interface operates in two modes:

- IP Trunk, available with Release 7 or later
- Media Processor (MedPro), available with Release 10 or later

The IP Trunk mode is Internet Telephone Server—Enterprise (ITS-E) compatible, and the MedPro mode is H.323 V2 compatible. The TN802B IP Interface is backwards compatible and defaults to IP Trunk mode. You must administer it to use it in MedPro mode.

TN2302AP Media Processor

Unlike the TN802B IP Interface Assembly, the TN2302AP operates in one mode: Media Processor (MedPro), which is H.323 V2 compatible.

For more information on the IP Solutions capabilities and limitations, refer to the *Overview for Avaya Communication Manager*.

Installing a TN2302AP IP Media Processor

Return to Task List

Installing a TN2302AP media processor consists of 4 sets of tasks:

- Preparing for Installation and Upgrade
- Installing the TN2302AP IP Media Processor
- Upgrading TN802 IP Trunking to TN2302AP IP Media Processor
- Upgrading a TN802B IP Interface Assembly to TN2302AP IP Media Processor

For administration, refer to the *Administration for Network Connectivity for Avaya Communication Manager*.

Preparing for Installation and Upgrade

This section includes general information on preparations and the Task List: Prepare for Installation and Upgrade.

In addition to the TN2302AP IP Media Processor, you must also install and administer a C-LAN circuit pack (*TN799x*). For C-LAN administration, refer to *Administration for Network Connectivity for Avaya Communication Manager*.

The TN2302AP IP Media Processor can work with the TN802 IP Trunking and the TN802B IP Interface Assembly. When figuring the maximum number of circuit packs, you must include all in your total count.

Each TN2302AP can support between 32 and 64 voice channels, depending on the codecs used.

Note:
The TN802 IP Trunk cannot talk directly via Ethernet to the TN2302AP IP Media Processor.

Task List: Prepare for Installation and Upgrade

Perform these tasks in order:

1. Check your onsite equipment
2. Check your shipment

Check your onsite equipment

Begin

Return to Task List

Have the following equipment on site before your shipment arrives:

- An unoccupied port slot in the Avaya Media Gateway for each TN2302AP IP Media Processor

Note:
The TN2302AP consumes 16 W of power per slot compared with an average of 15 W per slot. Do not fill every available slot in a given carrier with them.

- An additional unoccupied port slot for the TN799x, if needed. If you have an existing C-LAN TN799x circuit pack, replace it with the TN799DP or later if it is to be used for IP solutions registration.
- A 10 BaseT or 10/100 BaseT Ethernet connection into your local area network (LAN) for the TN2302AP.
- A 10 BaseT Ethernet connection into your LAN for the TN799x.

- Two or more valid, unused IP addresses on your network (one for each TN2302AP or TN802/B and one for each C-LAN) that can be assigned to the IP Media Processor server. You also need the subnet mask and default gateway.

Note:
The customer provides the IP address, subnet mask, and gateway address.

See Check your shipment to make sure you have everything you need to start the installation procedure.

Return to Task List

Check your shipment

Begin

Return to Task List

When your Avaya Media Gateway IP Solutions order arrives at your site, check the contents (see Required Hardware).

1. Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
2. If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. The carton should contain the items in Required Hardware for *each TN2302AP* IP Media Processor ordered.
3. Read and follow any directions inserted into the package by the factory.

Required Hardware	
Description	**Quantity**
TN799x C-LAN circuit pack	1 [1]
TN2302AP IP Media Processor	1
TN2302AP Amphenol Adapter [2]	1
ADPTR-259A connector	1

1.One TN799x supports more than one TN2302AP.
2.The adapter has an amphenol connector on one side and an RJ45 connector on the other for connecting to the LAN. See TN2302AP Amphenol Adapter.

Note:
The customer must provide one CAT5 or better cable for each TN2302AP.

TN2302AP Amphenol Adapter

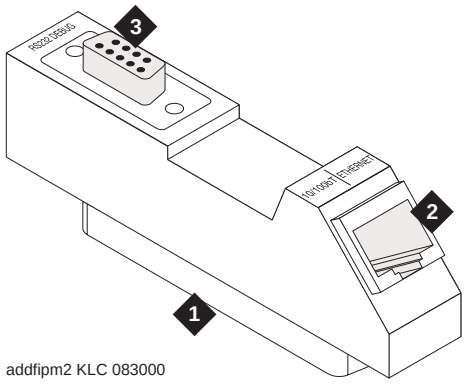


Figure Notes:

[1] Amphenol connector to backplane connector corresponding to TN2302AP slot

[2] To Ethernet

[3] 9-pin connector for maintenance

Return to Task List

Installing the TN2302AP IP Media Processor

To install a TN2302AP IP Media Processor, you must install

- One or more TN2302AP circuit pack
- One or more TN799x circuit pack (each TN799x can support more than one TN2302AP)
- An IP Media Processor adapter.

Task List: Install TN2302AP

Perform these tasks in order:

1. Connect the cables for TN799x
2. Connect the cables for TN2302AP
3. Connect the Ethernet
4. Install the Circuit Packs
5. Perform Initial Administration Steps for C-LAN and IP Media Processor
6. Test the External Connection to the LAN

Connect the cables for TN799x

Begin

Return to Task List

1. Determine into which port slots you are putting the TN799x C-LAN circuit packs.

From the rear of the cabinet:

2. Connect the 259A connector to the backplane connector corresponding to the TN799x slot.

3 Connect one end of the CAT5 cable to the 259A connector. Connect the other end to the customer's network.

4

Connect the cables for TN2302AP

Begin

Return to Task List

1 Determine into which port slots you are putting the TN2302AP IP Media Processor circuit packs.

From the rear of the cabinet:

2 Connect the amphenol connector on the adapter to the backplane connector corresponding to each TN2302AP slot.

3

Connect the Ethernet

Begin

Return to Task List

Connect the network cable to the ETHERNET connector on the TN802B external cable assembly.

You need a CAT5 or better cable for 100-Mbyte operation.

Install the Circuit Packs

Begin

Return to Task List

CAUTION:
When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

Note:
The TN799B/C and TN2302AP circuit packs are hot-swappable, so you do not need to power down the carrier to install them.

1 Insert the TN799x circuit pack into the port slot identified earlier.

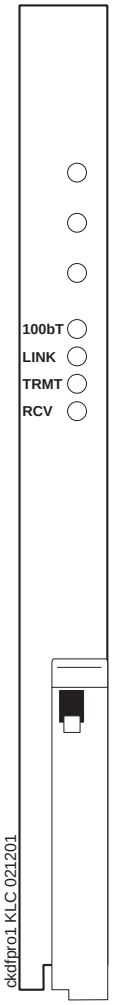
Note:
To properly seat the circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

2 Insert the TN2302AP IP Media Processor into the port slot you reserved for it and seat it properly (See TN2302AP IP Interface faceplate).

When you plug in the TN2302AP IP Media Processor, the circuit pack starts to boot. The RED LED stays on until an IP address is assigned to the circuit pack.

3 Type **list configuration all** and press **Enter** to verify that the system recognizes the TN2302AP circuit packs.

TN2302AP IP Interface faceplate



Return to Task List

Perform Initial Administration Steps for C-LAN and IP Media Processor

Begin

Return to Task List

Note:
Refer to the *Administration for Network Connectivity for Avaya Communication Manager* for specific information.

1. Log in as **craft**.

Note:
If you have a **dadmin** login and password, you can use them instead of craft and the craft password.

2. Type **change node-names** and press **Enter**. See Node Names screen.
3. On page 2, type in the node names and IP addresses for the TN799x and the TN2302AP.

Note:
The customer or design team provides the actual name and address. Suggest a generic name and not one tied to the circuit pack.

4. Type **display circuit-pack** and press **Enter**. Verify that the TN2302AP shows up in the Code column.

5 Type **change ip-interfaces** and press **Enter**. See IP Interfaces screen

Note:
The customer provides the IP address, subnet mask, and gateway address.

6 Type in the following information for the TN2302AP IP Media Processor and TN799x C-LAN:

- Set **Slot** field to ***UUCSS***.
- The **Code** and **SFX** fields are automatically populated with TN799x and TN2302AP.
- In the **Node Name** field type the same node name entered on the Node Name screen.
- In the **Subnet Mask** field use the default setting unless you are given a different subnet mask.
- In the **Gateway Address** field use the address you are given or leave blank.
- Set the **Net Region** field to **1** unless you are given a different number.
- Set the **Enable Eth Pt** field to **y**

7 Press **Enter** to save the information and effect the new settings.

Refer to the *Administration for Network Connectivity for Avaya Communication Manager* for more information on these administration steps and for the steps to administer IP Softphones and H.323 trunks.

Note:
The administration of the TN2302AP is the same as that for the TN802B.

Node Names screen

```
change node-names                                          Page   2 of   6
                                NODE NAMES

    Name              IP Address           Name              IP Address

clan-a1             192.168.1 .31                        .   .   .
clan-b1             192.168.2 .31                        .   .   .
default             0  .0  .0  .0                       .   .   .
mrmedpro1           192.168.1 .81                        .   .   .
                       .   .   .                         .   .   .
                       .   .   .                         .   .   .
                       .   .   .                         .   .   .
                       .   .   .                         .   .   .
                       .   .   .                         .   .   .
                       .   .   .                         .   .   .
                       .   .   .                         .   .   .
                       .   .   .                         .   .   .
                       .   .   .                         .   .   .
```

IP Interfaces screen

```
change ip-interfaces                                          Page   1 of   2

                                  IP INTERFACES
 Inter-region IP connectivity allowed?  n
Enable                                                                    Net
Eth Pt Type   Slot  Code Sfx Node Name       Subnet Mask     Gateway Address Rgn
   y  C-LAN  01A09 TN799  B  clan-a1         255.255.255.0      .   .   .    1
   y  MEDPRO 01A13 TN802  B  med-a1          255.255.255.0   192.168.10 .21  1
   y  C-LAN  01B03           ppp10           255.255.255.0      .   .   .    1
   y  MEDPRO 01B09 TN2302 AP mrmedpro1       255.255.255.0      .   .   .    1
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
   n                                         255.255.255.0      .   .   .
```

Return to Task List

Test the External Connection to the LAN

Begin

Return to Task List

To test the external IP connections, ping the C-LAN or IP Media Processor server and ping a known computer connected to your network. If everything is configured correctly, the Result column on the Ping Results screen reads **pass**. If it reads **abort**, verify the IP-address information and check the connectivity, including the cabling.

1. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable ***nnn.nnn.nnn.nnn*** is the IP address of the IP Media Processor and ***UUCSS*** is the cabinet, carrier, and slot of the IP Media Processor.
2. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable ***nnn.nnn.nnn.nnn*** is the IP address of the customer's gateway and ***UUCSS*** is the cabinet, carrier, and slot of the IP Media Processor.
3. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable ***nnn.nnn.nnn.nnn*** is the IP address of another computer beyond the gateway and ***UUCSS*** is the cabinet, carrier, and slot of the TN2302AP IP Media Processor.

The IP Media Processor is now installed in the carrier and connected to the IP network.

Ping Results screen

```
ping ip-address 192.168.10.21

                          PING RESULTS

  End-pt IP        Port      Port Type  Result    Time(ms)  Error Code

  192.168.10.21    01A13      MEDPRO   PASS       10        1124
```

Return to Task List

Upgrading TN802 IP Trunking to TN2302AP IP Media Processor

Return to Task List

To upgrade IP Trunking to IP Media Processor, you must replace

- the TN802 circuit pack with a TN2302AP circuit pack
- the TN799 circuit pack with a TN799DP circuit pack
- the H600 512, G1 external cable assembly with an IP Media Processor adapter

Task List: Upgrade TN802 to TN2302AP

Perform these tasks to upgrade the TN802 to TN2302AP:

1. Perform Pre-upgrade Administration
2. Remove the Circuit Packs
3. Replace the Cables
4. Install the Circuit Packs
5. Administer and Test

Perform Pre-upgrade Administration

Begin

Return to Task List

1. Type **list configuration all** and press **Enter** to locate all the TN802 circuit pack ports.
2. Type **display port *UUCSSppp*** and press **Enter** to find the trunk group number associated with the TN802 circuit pack port.
3. Type **change trunk-group *number*** and press **Enter**. Go to screen 4. Delete all the TN802 ports.
4. Repeat steps1 through 3 for each port.
5. Type **remove ds1 *UUCSS*** and press **Enter**.

Remove the Circuit Packs

Begin

Return to Task List

CAUTION:
When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

Note:
The TN799 and TN2302AP circuit packs are hot-swappable, so you do not need to power down the carrier to remove or install them.

1. Press the recessed Reset button on the TN802 circuit pack until **MSHUT*** starts flashing on the LCD. When **MSHUT*** is in a steady state, it is safe to remove the circuit pack.
2. Remove the TN799 and TN802 circuit packs.

Replace the Cables

Begin

Return to Task List

1. Disconnect the network cable from the Ethernet connection.
2. Turn off the monitor and unplug it from the AC outlet, if necessary.
3. Disconnect the monitor, keyboard, and mouse from the H600-512 external cable assembly, if necessary.
4. Turn off the modem and unplug it from the AC outlet.
5. Disconnect the modem's RS232 port from the H600-512 external cable assembly.

From the rear of the cabinet:

6. Disconnect the amphenol connector on the existing external cable assembly from the backplane connector corresponding to the TN802 circuit pack.
7. Connect the amphenol connector of the TN2302AP Amphenol adapter to the backplane connector corresponding to the slot selected for the TN2302AP circuit pack.

Note:
The TN802 occupied 3 slots, and the cable was connected to the rightmost backplane slot. For convenience use the same rightmost slot vacated by the TN802 circuit pack for the TN2302AP circuit pack.

8. Connect the network cable to the Ethernet connector on the TN2302AP Amphenol adapter.

Return to Task List

Install the Circuit Packs

Begin

Return to Task List

1. If replacing the TN799 circuit pack, install the TN799DP circuit pack in the slot vacated by the TN799 circuit pack.
2. For convenience install the TN2302AP circuit pack in the rightmost slot vacated by the TN802. The other 2 slots are now available for other circuit packs.

When you plug in the TN2302AP IP Media Processor, the circuit pack starts to boot. The RED LED stays on until an IP address is assigned to the circuit pack.

3 Type **list configuration all** and press **Enter** to verify that the system recognizes the TN2302AP circuit packs.

Administer and Test

Begin

Return to Task List

1 Administer the TN799DP C-LAN. Refer to the *Administration for Network Connectivity for Avaya Communication Manager*.

2 Administer the IP Media Processor, which is usually done remotely. Call your service representative to start the process.

3 Complete the administration and testing.

See Perform Initial Administration Steps for C-LAN and IP Media Processor and Test the External Connection to the LAN for detailed instructions.

Return to Task List

Upgrading a TN802B IP Interface Assembly to TN2302AP IP Media Processor

Return to Task List

To upgrade IP Interface Assembly to IP Media Processor, you must replace

- the TN802B circuit pack with a TN2302AP circuit pack
- the TN799 circuit pack with a TN799DP circuit pack, if necessary
- the H600 512, G1 external cable assembly with an IP Media Processor adapter

Task List: Upgrade TN802B to TN2302AP

1 Perform Pre-upgrade Administration

2 Remove the Circuit Packs

3 Replace the Cables

4 Install the Circuit Packs

5 Perform Additional Administration Steps

Perform Pre-upgrade Administration

Begin

Return to Task List

1 Type **change ip-interfaces** and press **Enter**. See IP Interfaces screen.

2 Set the **Enable Eth Pt** field to **n**.

3 Press **Enter** to effect the change.

4 Type **change ip-interfaces** and press **Enter**.

5 Delete the information in the **Type**, **Slot**, and **Node Name** fields for each TN802B you are replacing.

6 Press **Enter** to save the information and effect the new settings.

IP Interfaces Screen

```
change ip-interfaces                                          Page   1 of   2

                                  IP INTERFACES
 Inter-region IP connectivity allowed?  n
Enable                                                                    Net
Eth Pt Type   Slot  Code Sfx Node Name       Subnet Mask     Gateway Address Rgn
   y   C-LAN  01A09 TN799  B clan-a1         255.255.255.0      .   .   .    1
   n   MEDPRO               med-a1          255.255.255.0   192.168.10 .21  1
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n 255.255.255.0      .   .   .
   n 255.255.255.0      .   .   .
   n 255.255.255.0      .   .   .
   n 255.255.255.0      .   .   .
   n 255.255.255.0      .   .   .
   n 255.255.255.0      .   .   .
   n 255.255.255.0      .   .   .
```

Return to Task List

Remove the Circuit Packs

Begin

Return to Task List

CAUTION:

When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

Note:

The TN799 and TN2302AP circuit packs are hot-swappable, so you do not need to power down the carrier to remove or install them.

Note:

If replacing the existing TN799 circuit pack, remove it first and replace it with the new TN799DP.

1. Press the recessed Reset button on the TN802B circuit pack until **MSHUT*** starts flashing on the LCD. When **MSHUT*** is in a steady state, it is safe to remove the circuit pack.
2. Remove the TN799 and TN802B circuit packs.

Return to Task List

Replace the Cables

Begin

Return to Task List

1. Disconnect the network cable from the Ethernet connection.
2. Turn off the modem and unplug it from the AC outlet. It is not needed for the TN2302AP.
3. Disconnect the modem's RS232 port from the H600-512 external cable assembly.

From the rear of the cabinet:

4. Disconnect the amphenol connector on the external cable assembly from the backplane connector corresponding to the TN802B circuit pack.
5. Connect the amphenol connector on the TN2302AP Amphenol adapter to the backplane connector corresponding to slot selected for the TN2302AP circuit pack.

Note:
The TN802 circuit pack occupied 3 slots, and the cable was connected to the rightmost slot. For convenience use the same rightmost slot vacated by the TN802 circuit pack for the TN2302AP circuit pack. The other 2 slots are now available for other circuit packs.

6. Connect the network cable to the Ethernet connector on the TN2302AP Amphenol adapter.

Return to Task List

Install the Circuit Packs

Begin

Return to Task List

1. If replacing the TN799 circuit pack, install the TN799DP circuit pack in the slot vacated by the TN799 circuit pack.
2. For convenience install the TN2302AP circuit pack in the rightmost slot vacated by the TN802 circuit pack. The other 2 slots are now available for other circuit packs.

When you plug in the TN2302AP IP Media Processor, the circuit pack starts to boot. The RED LED stays on until an IP address is assigned to the circuit pack.

3. Type **list configuration all** and press **Enter** to verify that the system recognizes the TN2302AP circuit packs.

Return to Task List

Perform Additional Administration Steps

Begin

Return to Task List

1. Administer the TN799DP C-LAN, if necessary. Refer to the *Administration for Network Connectivity for Avaya Communication Manager*.
2. Administer the IP Media Processor, which is usually done remotely. Call your service representative to start the process.

3 Complete the administration and testing. Refer to Perform Initial Administration Steps for C-LAN and IP Media Processor and Test the External Connection to the LAN.

Installing a TN802B in Media Processor Mode

Return to Task List

To operate in MedPro mode, you must install the TN802B IP Interface and, if the system does not have one, you must also install and administer a TN799DP C-LAN circuit pack. For C-LAN administration, refer to *Administration for Network Connectivity for Avaya Communication Manager*.

If you have existing TN802 IP Interface circuit packs, you can upgrade them either by replacing the circuit pack with a TN802B or by downloading the TN802B firmware onto the circuit packs (see Upgrade to TN802B (R10)).

Task list: Install the TN802B in Media Processor mode

1 Prepare for Installation
2 Check your shipment
3 Connect the Cables for TN799x
4 Connect the Cables for TN802B
5 Connect the Modem
6 Connect the Ethernet
7 Install the Circuit Packs
8 Administer the TN799x C-LAN
9 Administer the IP Interface
10 Test the External Connection to the LAN

Prepare for Installation

Begin

Return to Task List

Have the following equipment on site before your shipment arrives:

- AC power outlets for the modem and monitor.
- Three unoccupied and adjoining port slots in the DEFINITY ECS for the TN802B IP Interface, if needed.
- The TN802B occupies only one slot, but it needs the two slots to its left for clearance.
- A 10 BaseT or 10/100 BaseT Ethernet connection into your local area network for the TN802B.
- One or more valid, unused IP addresses on your network that can be assigned to the IP Interface server. You also need the subnet mask and default gateway.
- An analog telephone line reserved (DID is okay) for the IP Interface diagnostic modem
- A valid telephone number reserved for the IP Interface diagnostic modem

In addition if non-U.S. customer:

- Modem comparable to a U.S. Robotics Sportster Model USR 33.6 EXT.
- Cable from modem to TN802B external cable assembly.

We recommend that you protect your cabinet with an uninterruptible power system (UPS).

If adding a TN799DP C-LAN circuit pack:

- An unoccupied port slot for the TN799DP, if needed. If you have an existing TN799x circuit pack, replace it with the TN799DP.
- A 10 BaseT Ethernet connection into your local area network for the TN799DP.
- One or more valid, unused IP addresses on your network that can be assigned to the IP Interface server.

Return to Task List

Check your shipment

Begin

Return to Task List

When your DEFINITY IP Interface Assembly order arrives at your site, check the contents (see Required Hardware).

1. Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
2. If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. See Required Hardware for what the carton should contain for each IP Interface ordered.
3. Read and follow any directions inserted into the package by the factory.

The TN802B external cable assembly is a bundle of cables with an amphenol connector at the end of the bundle and various PC-type connectors (VGA, Universal Serial Bus [USB], mouse, keyboard, Ethernet, modem, and COM2) at the ends of the individual cables. See TN802B IP Interface External Cable Assembly. Look for the label where the bundle enters the amphenol connector.

Required Hardware	
Description	**Quantity**
TN799x C-LAN circuit pack.	1[1]
TN802B IP Interface Assembly	1 or more
H600-512.G1 external cable assembly	1 or more
259A connector	1

Required Hardware	
Description	**Quantity**
CAT5 or better cable	1
U.S. Robotics Sportster external modem, Model USR 33.6 EXT (U.S. customers only). Non-U.S. customers must provide a modem comparable to this model.	1
20-ft DB-25 serial cable from modem to TN802B external cable assembly (U.S. customers only). Non-U.S. customers must provide a serial cable.	1

1. One TN799x supports more than one TN802B.

TN802B IP Interface External Cable Assembly

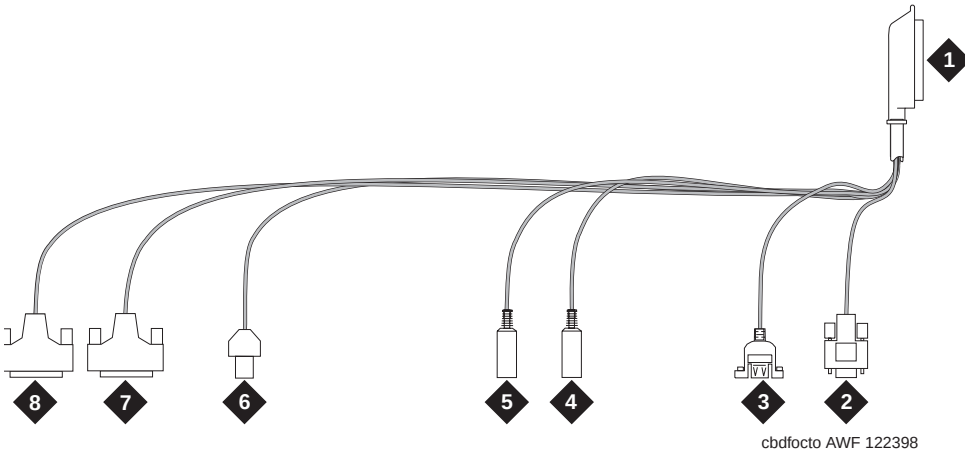


Figure Notes:

[1] Amphenol connector to connector corresponding to TN802B slot

[2] To VGA monitor

[3] To USB (not used)

[4] To keyboard

[5] To mouse

[6] To ethernet

[7] 25-pin male connector to modem

[8] 25-pin male connector to COM2 (not used)

Return to Task List

Connect the Cables for TN799x

Begin

Return to Task List

1 Determine into which port slots you are putting the TN799x C-LAN circuit packs.

From the rear of the cabinet:

2 Connect the 259A connector to the backplane connector corresponding to the TN799x slot.

3 Connect one end of the CAT5 cable to the 259A connector. Connect the other end to the customer's network.

4

Connect the Cables for TN802B

Begin

Return to Task List

1 Determine into which port slot you are putting the TN802B IP Interface.

Note:
Make sure that at least 3 adjoining slots are free.

2 From the rear of the cabinet, connect the amphenol connector on the external cable assembly to the backplane connector corresponding to that slot (the highest numbered connector of the 3 slots required).

3

Connect the Modem

Begin

Return to Task List

Note:
These instructions are for connecting the U.S. Robotics modem supplied to U.S. customers only. If using a different modem, follow the manufacturer's instructions on connecting the modem.

1 Connect the RS232 port of the modem to the MODEM connector of the TN802B external cable assembly.

Note:
Check the labels near the connectors; the MODEM and COM2 connectors look the same.

2 Connect an analog telephone line to the left most analog-line port on the modem as shown in External Modem Connections for U.S. Robotics Modem.

3 Make sure that the modem's DIP switches are set as shown in External Modem Connections for U.S. Robotics Modem and U.S. Robotics Modem Dip Switch Settings.

4 Plug the modem into an AC power outlet.

5 Turn on the modem using the switch on the front of the modem.

External Modem Connections for U.S. Robotics Modem

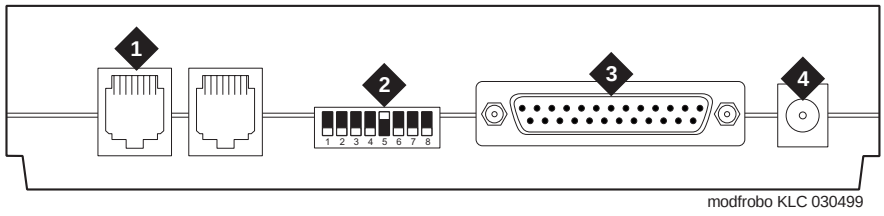


Figure Notes:

[1] Connect analog line here.

[2] DIP switch 5 must be up.

[3] Connect MODEM connector here.

[4] Connect power connector here.

U.S. Robotics Modem Dip Switch Settings

Dip Switch	Setting	Description
1	UP DOWN	Data Terminal Ready normal Data Terminal Ready override
2	UP DOWN	Verbal result codes Numeric result codes
3	UP DOWN	Suppress result codes Display result codes
4	UP DOWN	Echo offline commands No echo, offline commands
5	**UP** DOWN	**Auto answer on first ring or higher if specified in NVRAM** Auto answer off
6	UP DOWN	Carrier detect normal Carrier detect override
7	UP DOWN	Load NVRAM defaults Load factory defaults
8	UP DOWN	Dumb mode Smart mode

Return to Task List

Connect the Ethernet

Begin

Return to Task List

Connect the network cable to the ETHERNET connector on the TN802B external cable assembly.

You need a CAT5 or better cable for 100-Mbyte operation.

Install the Circuit Packs

Begin

Return to Task List

CAUTION:
When adding or replacing any hardware, be sure to ground yourself against electrostatic discharge (ESD) by wearing a grounded wrist strap.

Note:
The circuit packs are hot-swappable, so you do not need to power down the carrier to install them.

If you need to remove the TN802B IP Interface from the carrier at a later time, shut down Windows NT first by pressing the recessed reset button on the faceplate (see TN802B IP Interface faceplate) of the TN802B IP Interface until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.

Note:
If replacing the existing TN799 circuit pack, remove it first and replace it with the new one.

To properly seat the circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

1. Insert the TN799x circuit pack into the port slot identified earlier.
2. Insert the TN802B IP Interface into the rightmost of the three slots you reserved for it (see J58890MA-1 L30 IP Interface Assembly) and seat it properly.

   When you plug in the TN802B IP Interface, the circuit pack starts to boot and the LCD reads **PC Boot**. The circuit pack automatically reboots, and after about 3 to 4 minutes, the LCD changes to **MEDPRO***.

   If the TN802B is pre-administered at the factory, it reboots several times to initialize to MedPro mode.

Note:
For an initial installation, the TN802B IP Interface needs to be administered first.

If the TN802B is not pre-administered, go to Administer the IP Interface.

TN802B IP Interface faceplate

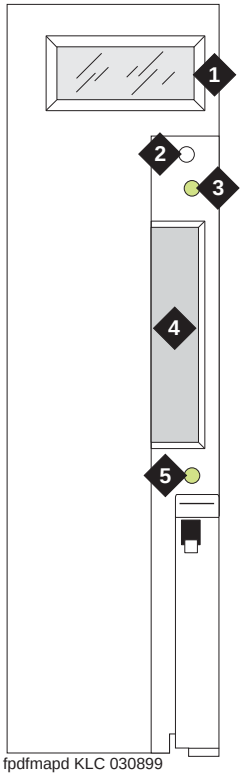


Figure Notes:

[1] LCD display

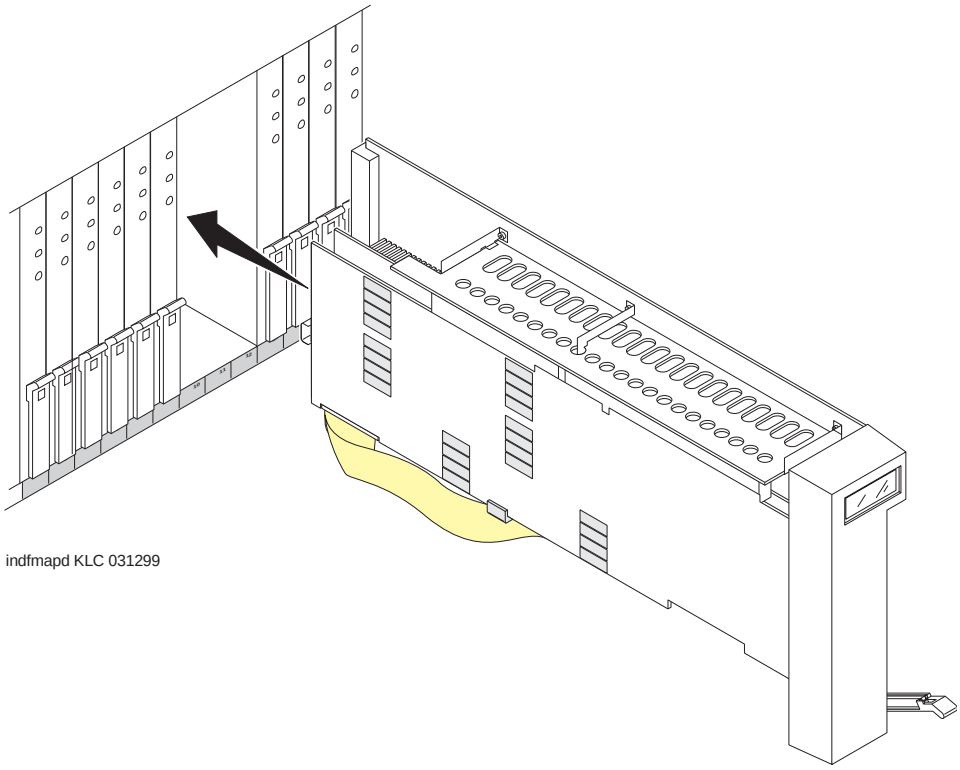
[2] Reset button (recessed)

[3] Red board status LED

[4] PCMCIA card slot

[5] Yellow PCMCIA disk-in-use LED

J58890MA-1 L30 IP Interface Assembly



Return to Task List

Administer the TN799x C-LAN

Begin

Return to Task List

To administer the TN799x circuit pack, refer to the *Administration for Network Connectivity for Avaya Communication Manager*.

Administer the IP Interface

Begin

Return to Task List

Administration is done either locally or remotely. If administered locally, proceed with the following administration steps. If administered remotely, call your service representative to start the process.

Note:
Refer to the *Administration for Network Connectivity for Avaya Communication Manager* for more information.

1. Log in as **craft**.

Note:
If you have a **dadmin** login and password, you can use them instead of craft and the craft password.

2. Type **change node-names** and press **Enter**.
3. On Node Names - Screen 2, type in the node name and IP address for the TN802B.

4. Type **change circuit-pack** and press **Enter**.
5. On Circuit Packs - Screen 1, check the Code column to see if it says DSMAPD or MedPro.
6. If not, type **MEDPRO** in the slot just above TN802B slot, and press **Enter**. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:

   MedPro type requires TN802 with application. Type **MEDPRO** on circuit-packs form.
7. Type **change ip-interfaces** and press **Enter**.
8. On IP Interfaces - Screen 1, type in the information for the TN802B IP Interface,
9. Set the **Enabled** field to **y**, and press **Enter**.

Note:

The customer provides the IP address, subnet mask, and gateway address.

At this time the TN802B LCD reads **PC BOOT ***, and about 3 to 4 minutes later reads **MEDPRO *** with the asterisk flashing.

Node Names - Screen 2

```
change node-names                                          Page   2 of   6
                                NODE NAMES

    Name              IP Address          Name              IP Address

clan-a1             192.168.1 .31                       .   .   .
clan-b1             192.168.2 .31                       .   .   .
default             0  .0  .0  .0                       .   .   .
med-a1              192.168.1 .81                       .   .   .
                       .   .   .                        .   .   .
                       .   .   .                        .   .   .
                       .   .   .                        .   .   .
```

Circuit Packs - Screen 1

```
change circuit-packs                                          Page   1 of   5
                            CIRCUIT PACKS

        Cabinet: 1                              Carrier: A
                                              Carrier Type: processor

 Slot Code  Sf Mode   Name                Slot Code  Sf Mode   Name
                                           11:  MEDPRO      RESERVED-IP
01: TN754         DIGITAL LINE            12:  MEDPRO      RESERVED-IP
02: TN758         POOLED MODEM            13:  TN802  B      MAPD BOARD
03: TN2144       ANALOG LINE              14:
04: TN746  B     ANALOG LINE              15:
05                                        16:
06: TN771  C     MAINTENANCE/TEST
07: TN464  F     DS1 INTERFACE
08: TN2140       E&M TIE TRUNK
09: TN767  E     DS1 INTERFACE
10: TN799  B     CONTROL-LAN

  '#' indicates circuit pack conflict.
```

IP Interfaces - Screen 1

```
change ip-interfaces                                  Page   1 of   2


 Network regions are interconnected?  n
  En-                                                                  Net
 abled Type   Slot  Code Sfx Node Name       Subnet Mask     Bcast/Gway Addr Rgn
   n  C-LAN  01A09 TN799    clan-a1      255.255.255.0   192.168.1.100 1
   y  MEDPRO 01A13 TN802  B med-a1       255.255.255.0   192.168.1 .21  1
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
   n                                        255.255.255.0      .   .   .
```

Return to Task List

Test the External Connection to the LAN

Begin

Return to Task List

To test the external IP connections, ping the IP Interface server, and ping a known computer connected to your network. If everything is configured correctly, the **Result** column on the Ping Results screen reads **pass**. If it reads **abort**, verify the IP-address information and check the connectivity, including the cabling.

1. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable ***nnn.nnn.nnn.nnn*** is the IP address of the TN802B IP Interface and ***UUCSS*** is the cabinet, carrier, and slot of the TN802B IP Interface.
2. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable ***nnn.nnn.nnn.nnn*** is the IP address of the customer's gateway and ***UUCSS*** is the cabinet, carrier, and slot of the TN802B IP Interface.
3. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **Enter**. The variable ***nnn.nnn.nnn.nnn*** is the IP address of another computer beyond the gateway and ***UUCSS*** is the cabinet, carrier, and slot of the TN802B IP Interface.

Return to Task List

Installing a TN802B in IP Trunk Mode

Return to Task List

Note:
IP Trunk mode should only be used to maintain compatibility with existing Release 7 IP Trunk or ITS-E installations. We strongly recommend that MedPro mode be used whenever possible.

Task list: Install the TN802B in IP Trunk mode

1. Prepare for Installation
2. Check your Shipment
3. Connect the Cables for TN802B
4. Connect the Modem
5. Connect the Monitor, Keyboard, and Mouse
6. Connect the Ethernet
7. Install the Circuit Pack
8. Test the Modem
9. Administer the IP Interface
10. Log onto the TN802B Interface Server
11. Change Mu-Law to A-Law (for systems using A-Law companding only)
12. Assign Server and Domain Names
13. Assign an IP Address
14. Assign Default Gateway if you use gateways.
15. Check Network Services
16. Test the External Connection to the LAN
17. Test the IP Interface Onboard LAN Connections

Prepare for Installation

Begin

Return to Task List

Have the following equipment on site before your shipment arrives:

- AC power outlets for the modem and monitor.
- Three unoccupied and adjoining port slots in the DEFINITY ECS for the TN802B IP Interface, if needed.
- The TN802B occupies only one slot, but it needs the two slots to its left for clearance.
- A 10 BaseT or 10/100 BaseT Ethernet connection into your local area network for the TN802B.
- One or more valid, unused IP addresses on your network that can be assigned to the IP Interface server. You also need the subnet mask and default gateway.
- An analog telephone line reserved (DID is okay) for the IP Interface diagnostic modem
- A valid telephone number reserved for the IP Interface diagnostic modem

In addition if non-U.S. customer:

- Modem comparable to a U.S. Robotics Sportster Model USR 33.6 EXT.
- Cable from modem to TN802B external cable assembly.

We recommend that you protect your cabinet with an uninterruptible power system (UPS).

Return to Task List

Check your Shipment

Begin

Return to Task List

When your DEFINITY IP Interface Assembly order arrives at your site, check the contents (see Required Hardware).

1. Inspect the shipping carton for damage before opening it. If the box is damaged, *do not open it*. Inform the shipping company, and ask for instructions on filing a claim.
2. If the box is undamaged, check the contents against the packing slip. Check the condition of each component, and note any damage or shortages on the packing slip. See Required Hardware for what the carton should contain for each IP Interface ordered.
3. Read and follow any directions inserted into the package by the factory.

The TN802B external cable assembly is a bundle of cables with an amphenol connector at the end of the bundle and various PC-type connectors (VGA, Universal Serial Bus [USB], mouse, keyboard, Ethernet, modem, and COM2) at the ends of the individual cables. See TN802B IP Interface External Cable Assembly. Look for the label where the bundle enters the amphenol connector.

Required Hardware	
Description	**Quantity**
TN799x C-LAN circuit pack.	1[1]
TN802B IP Interface Assembly	1 or more
H600-512.G1 external cable assembly	1 or more
259A connector	1

Required Hardware	
Description	**Quantity**
CAT5 or better cable	1
U.S. Robotics Sportster external modem, Model USR 33.6 EXT (U.S. customers only). Non-U.S. customers must provide a modem comparable to this model.	1
20-ft DB-25 serial cable from modem to TN802B external cable assembly (U.S. customers only). Non-U.S. customers must provide a serial cable.	1

1. One TN799x supports more than one TN802B.

TN802B IP Interface External Cable Assembly

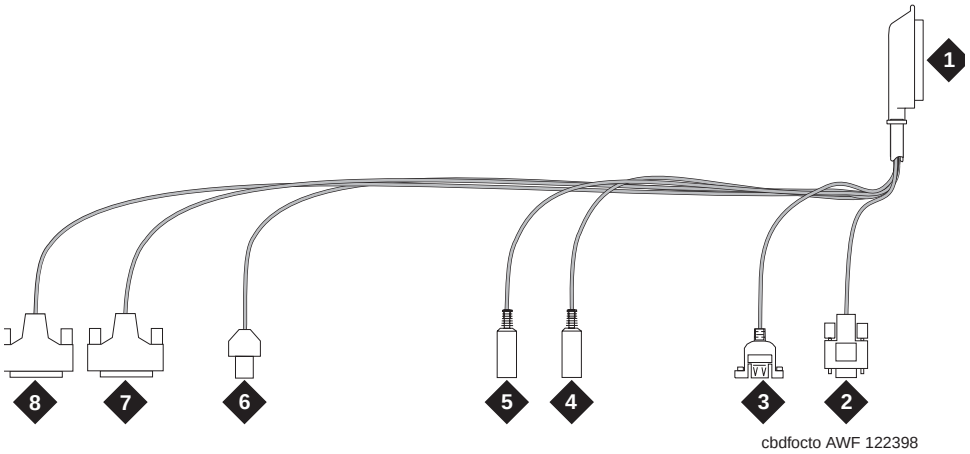


Figure Notes:

[1] Amphenol connector to connector corresponding to TN802B slot

[2] To VGA monitor

[3] To USB (not used)

[4] To keyboard

[5] To mouse

[6] To ethernet

[7] 25-pin male connector to modem

[8] 25-pin male connector to COM2 (not used)

Return to Task List

Connect the Cables for TN802B

Begin

Return to Task List

1 Determine into which port slot you are putting the TN802B IP Interface.

Note:
Make sure that at least 3 adjoining slots are free.

2 From the rear of the cabinet, connect the amphenol connector on the external cable assembly to the backplane connector corresponding to that slot (the highest numbered connector of the 3 slots required).

3

Connect the Modem

Begin

Return to Task List

Note:
These instructions are for connecting the U.S. Robotics modem supplied to U.S. customers only. If using a different modem, follow the manufacturer's instructions on connecting the modem.

1 Connect the RS232 port of the modem to the MODEM connector of the TN802B external cable assembly.

Note:
Check the labels near the connectors; the MODEM and COM2 connectors look the same.

2 Connect an analog telephone line to the left most analog-line port on the modem as shown in External Modem Connections for U.S. Robotics Modem.

3 Make sure that the modem's DIP switches are set as shown in External Modem Connections for U.S. Robotics Modem and U.S. Robotics Modem Dip Switch Settings.

4 Plug the modem into an AC power outlet.

5 Turn on the modem using the switch on the front of the modem.

External Modem Connections for U.S. Robotics Modem

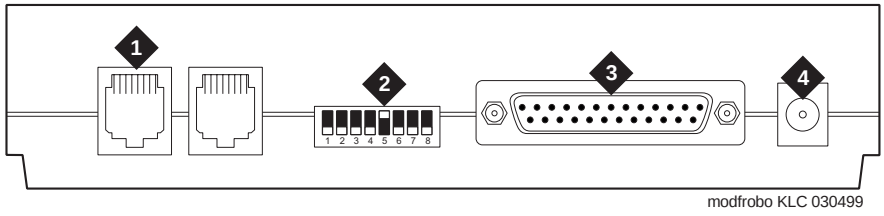


Figure Notes:

[1] Connect analog line here.

[2] DIP switch 5 must be up.

[3] Connect MODEM connector here.

[4] Connect power connector here.

U.S. Robotics Modem Dip Switch Settings		
Dip Switch	**Setting**	**Description**
1	UP DOWN	Data Terminal Ready normal Data Terminal Ready override
2	UP DOWN	Verbal result codes Numeric result codes
3	UP DOWN	Suppress result codes Display result codes
4	UP DOWN	Echo offline commands No echo, offline commands
5	**UP** DOWN	**Auto answer on first ring or higher if specified in NVRAM** Auto answer off
6	UP DOWN	Carrier detect normal Carrier detect override
7	UP DOWN	Load NVRAM defaults Load factory defaults
8	UP DOWN	Dumb mode Smart mode

Return to Task List

Connect the Monitor, Keyboard, and Mouse

Begin

Return to Task List

Note:
Only make these connections if administered locally. Not necessary if administered remotely.

You must connect these before inserting the TN802B IP Interface.

1. Attach a VGA monitor to the VGA connector of the TN802 IP Interface external cable assembly.
2. Attach the keyboard to the KEYBOARD connector of the external cable assembly.
3. Attach the mouse to the MOUSE connector of the external cable assembly.
4. Plug the monitor into an AC power receptacle and turn it on.

Return to Task List

Connect the Ethernet

Begin

Return to Task List

Connect the network cable to the ETHERNET connector on the TN802B external cable assembly.

You need a CAT5 or better cable for 100-Mbyte operation.

Install the Circuit Pack

Begin

Return to Task List

Note:
The TN802B IP Interface is hot-swappable, so you do not need to power down the carrier to install it.

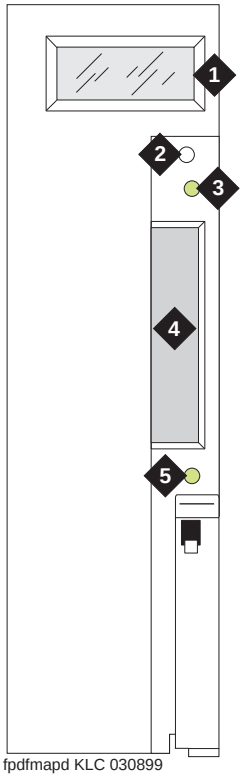
If you need to remove the TN802B IP Interface from the carrier at a later time, shut down Windows NT first by pressing the recessed reset button on the faceplate (see TN802B IP Interface faceplate) of the TN802B IP Interface until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.

1. Insert the TN802B IP Interface into the rightmost of the three slots you reserved for it (see J58890MA-1 L30 IP Interface Assembly).

Note:
To properly seat the circuit pack, push firmly on the front of the faceplate until the latch reaches the bottom rail of the carrier. Then close the latch until it is fully engaged.

When you plug in the TN802B IP Interface, the circuit pack starts to boot and the LCD reads **PC Boot** then after about 3 to 4 minutes it changes to **IP TRK ***, the default mode.

TN802B IP Interface faceplate



fpdfmapd KLC 030899

Figure Notes:

[1] LCD display

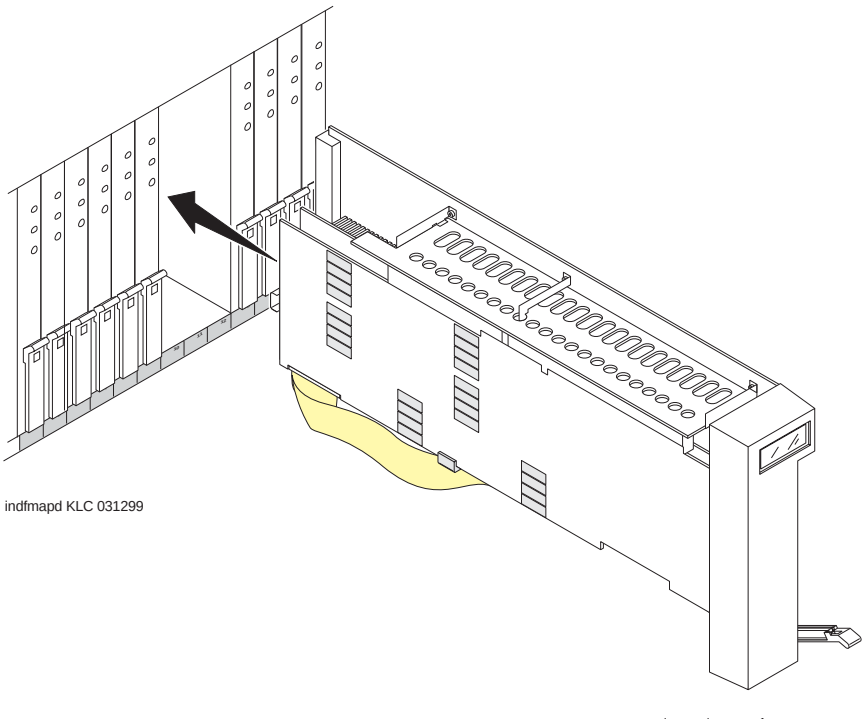
[2] Reset button (recessed)

[3] Red board status LED

[4] PCMCIA card slot

[5] Yellow PCMCIA disk-in-use LED

J58890MA-1 L30 IP Interface Assembly



Return to Task List

Test the Modem

Begin

Return to Task List

1. Check for dial tone.
2. Contact Avaya Support and ask a representative to dial in to your IP Interface server.

Administer the IP Interface

Begin

Return to Task List

Administration is done either locally or remotely. If administered locally, proceed with the following administration steps. If administered remotely, call your service representative to start the process.

1. Log in as **craft**.

Note:
If you have a **dadmin** login and password, you can use them instead of craft and the craft password.

2 Type **change circuit-pack** and press **Enter**.

3 In Circuit Packs - Screen 1, check the **Code** column to see if the slots above the TN802B says ***DSMAPD*** or ***MedPro***.

4 If ***MEDPRO***, go to the entry just above the TN802B that says ***MEDPRO***.

5 Type ***DSMAPD***, and press **Enter**. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:

MedPro type requires TN802 with application. Type MEDPRO on circuit-packs form.

Circuit Packs - Screen 1

```
change circuit-packs                                        Page   1 of   5
                              CIRCUIT PACKS

        Cabinet: 1                              Carrier: A
                                             Carrier Type: processor

 Slot Code  Sf Mode   Name                Slot Code  Sf Mode   Name
                                           11:  MEDPRO      RESERVED-IP
01: TN754          DIGITAL LINE            12:  MEDPRO      RESERVED-IP
02: TN758          POOLED MODEM            13:  TN802  B      MAPD BOARD
03: TN2144       ANALOG LINE               14:
04: TN746  B     ANALOG LINE               15:
05                                         16:
06: TN771  C     MAINTENANCE/TEST
07: TN464  F     DS1 INTERFACE
08: TN2140       E&M TIE TRUNK
09: TN767  E     DS1 INTERFACE
10: TN799  B     CONTROL-LAN

  '#' indicates circuit pack conflict.
```

Return to Task List

Log onto the TN802B Interface Server

Begin

Return to Task List

Note:
Use the attached keyboard, mouse, and monitor for the following administration.

To log on remotely through pcANYWHERE:

1 Dial in to the server through pcANYWHERE using the dialup number supplied.

WARNING:
When connected remotely via pcANYWHERE, use only the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.

2 Click on the pcANYWHERE Remote Host Computer button on the toolbar.

To log on locally using the monitor, keyboard, and mouse:

1 Press **Ctrl**, **Alt** and **Del** simultaneously.

To complete the logon steps:

1. Type **administrator** in the **User Name** field.
2. Type **iptrunk** in the **Password** field and click **OK**.
3. After logging on for the first time, change the administrator password and, if desired, the user name, to ensure security. See your Windows NT server documentation for details.

Return to Task List

Change Mu-Law to A-Law (for systems using A-Law companding only)

Begin

Return to Task List

For systems using A-Law companding, an additional procedure is necessary.

On the SAT:

1. Busyout the trunk group associated with the IP trunk by typing **busyout board *UUCSS*** and pressing **Enter**.

In the Windows interface to TN802B:

2. Click on **Control Panel > Services**.
3. Highlight **IP Trunk Service**, then click on **Stop**.
4. In the lower left-hand corner, right-click **Start > Explore**.
5. Go to the c: drive and click on the **its** folder, then the **bin** folder.
6. Double-click on the **its.ini** file to open it in Notepad.
7. Under the ***[MediaLib]*** section, go to C**OMPANDING=MLAW**. Change **MLAW** to **ALAW**.
8. Click on **File > Save** to save the file.
9. Click on **File > Exit** to exit Notepad.
10. Click on **Control Panel > Services**.
11. Highlight **IP Trunk Service**, then click on **Start**.

Note:
Do not select **Startup**.

After service has started, go to the SAT.

12. Release the trunk group associated with the IP trunk by typing **release board *UUCSS*** and pressing **Enter**.

Return to Task List

Assign Server and Domain Names

Begin

Return to Task List

The Windows NT server identifies servers using a server name plus a domain name that locates the named server in a particular part of the network. The TN802B IP Interface is shipped with generic server and domain names. Assign replacement names that are meaningful within your network.

1. Click on **My Computer > Control Panel > Network**.

2. Select the **Identification** tab, then click **Change**.
3. Type the new server name in the **Computer Name** field.
4. Type the new domain name in the **Domain** field and click **OK > OK > Close**.
5. When prompted to reboot the computer, select one of the following options:
   - **No** if you have not assigned IP addresses; then go to Assign an IP Address
   - **Yes** if you have assigned IP addresses

Return to Task List

Assign an IP Address

Begin

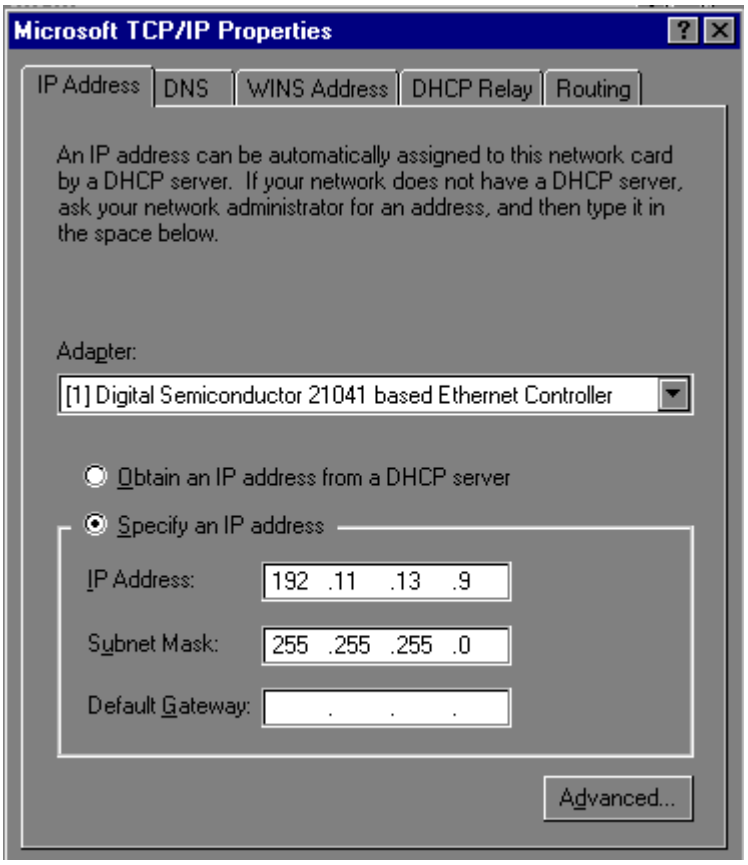
Return to Task List

1. Click on **My Computer > Control Panel > Network**.
2. Click the **Protocols** tab.
3. Select **TCP/IP Protocol** from the list.
4. Click the **Properties** option in the Network window.
5. On the TCP/IP Properties Window - IP Address, Adapter [1], verify that the **Adapter** drop down menu lists 2 DEC Ethernet adapters.

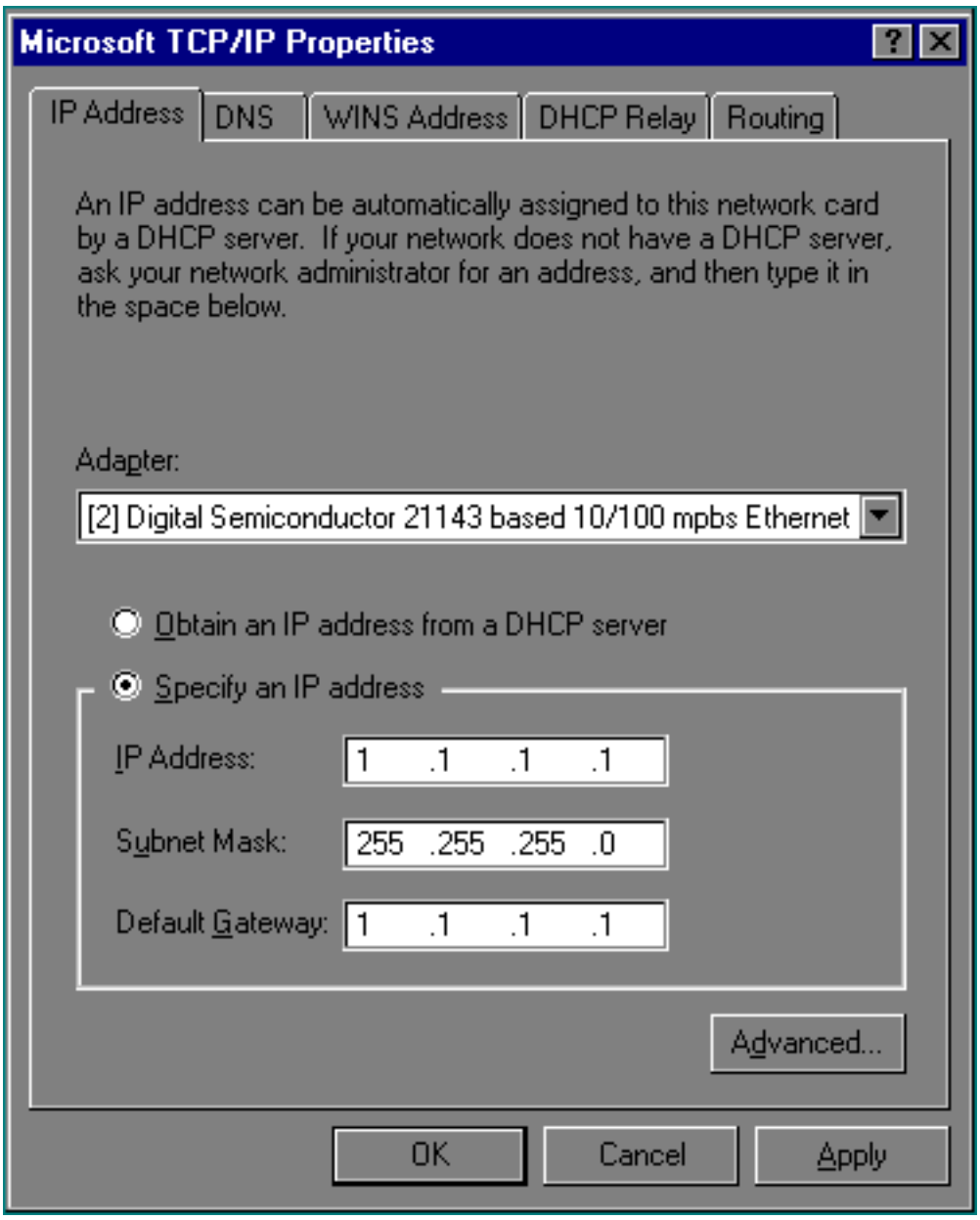
CAUTION:
Do not change any settings on the adapter labeled [1] for any reason.

6. On the TCP/IP Properties Window - IP Address, Adapter [2], select the DEC Ethernet adapter labeled [2].
7. Type a valid IP address for the IP Interface server in the **IP Address:** field.
8. Type the appropriate subnet mask in the **Subnet Mask:** field.

TCP/IP Properties Window - IP Address, Adapter [1]


Microsoft TCP/IP Properties
IP Address
DNS
WINS Address
DHCP Relay
Routing
An IP address can be automatically assigned to this network card by a DHCP server. If your network does not have a DHCP server, ask your network administrator for an address, and then type it in the space below.
Adapter:
[1] Digital Semiconductor 21041 based Ethernet Controller
Obtain an IP address from a DHCP server
Specify an IP address
IP Address:
192 .11 .13 .9
Subnet Mask:
255 .255 .255 .0
Default Gateway:
Advanced...

TCP/IP Properties Window - IP Address, Adapter [2]


Microsoft TCP/IP Properties
IP Address
DNS
WINS Address
DHCP Relay
Routing
An IP address can be automatically assigned to this network card by a DHCP server. If your network does not have a DHCP server, ask your network administrator for an address, and then type it in the space below.
Adapter:
[2] Digital Semiconductor 21143 based 10/100 mpbs Ethernet
Obtain an IP address from a DHCP server
Specify an IP address
IP Address:
1 .1 .1 .1
Subnet Mask:
255 .255 .255 .0
Default Gateway:
1 .1 .1 .1
Advanced...
OK
Cancel
Apply

Return to Task List

Assign Default Gateway

Begin

Return to Task List

Note:
Not all networks require these steps. Check with the local network administrator to determine which are required.

1. If you use gateways, type the IP address of the default gateway for the IP Interface server in the **Default Gateway:** field.
2. On the TCP/IP Properties Window - DNS, click on the DNS tab and verify that the domain DNS server is correct.

3. Type domain name in the **Domain** field.
4. If using DNS, click **Add** under the **DNS Service Search Order** field and type its IP address.
5. On the TCP/IP Properties Window - WINS Address, click on the WINS Address tab.

Note:
Make sure the [2] DEC shows in the **Adapter** field.

6. If WINS server is available, type its IP address in the **Primary WINS Server** field.
7. If DNS is available, select **Enable DNS for Windows Resolution**.
8. If the network uses an imported LMHOSTS file, select **Enable LMHOSTS Lookup** and **Import LMHOSTS** and click **OK**.
9. If the following dialog box opens, click **Yes**.

   At least one of the adapter cards has an empty primary WINS address. Do you want to continue?
10. Click the Bindings tab to effect the changes.

    NetBIOS Interface, Server, and Workstation should now be enabled. If any are disabled (a red circle with a line through it), review the previous network-configuration steps for omissions or errors.
11. Click **Close**.

WARNING:
When connected remotely via pcANYWHERE, use only the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.

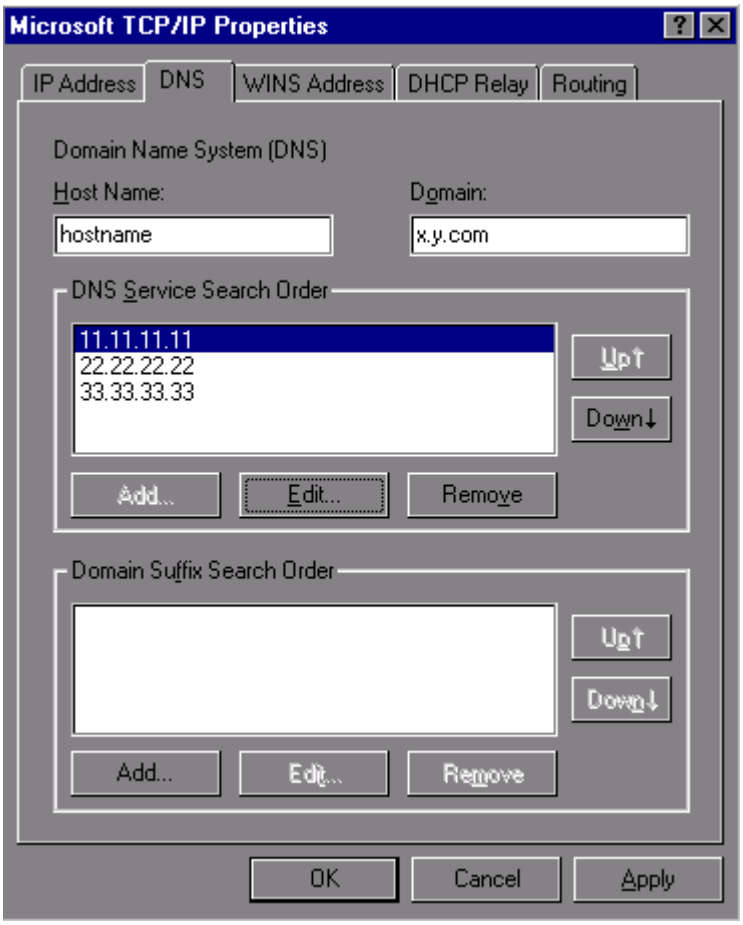
12. Restart the computer.

    If administered remotely through pcANYWHERE, click on the pcANYWHERE Restart Host Computer button on the toolbar to restart the computer.

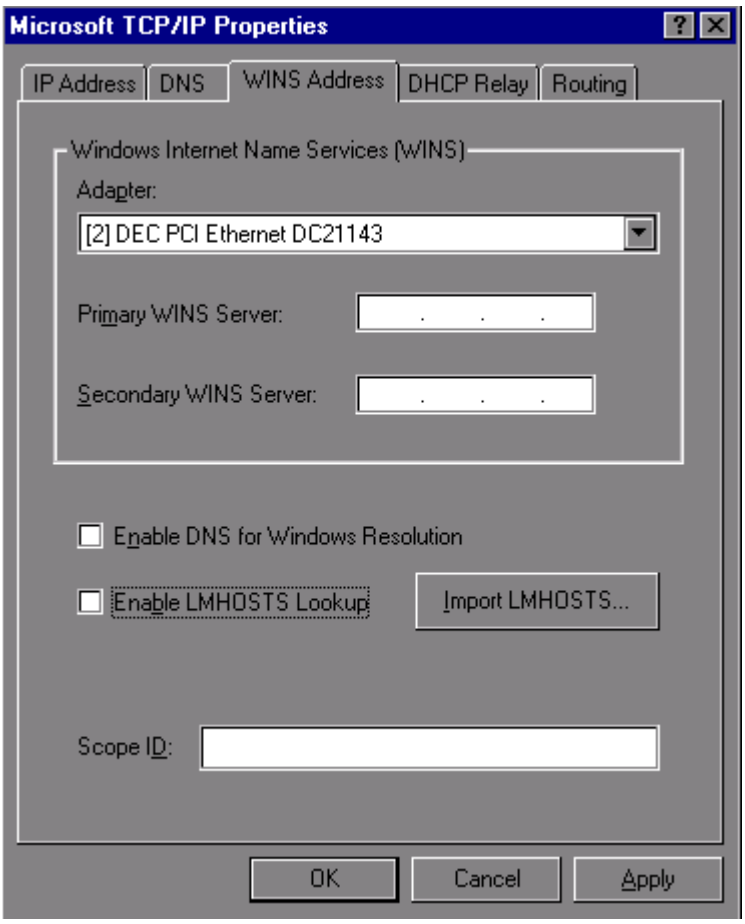
    or if administered locally on a monitor, keyboard, and mouse:

    Click **Yes** in the dialog box to restart the computer.

TCP/IP Properties Window - DNS



TCP/IP Properties Window - WINS Address



Return to Task List

Check Network Services

Begin

Return to Task List

When the server restarts, make sure that the required network services have started correctly. If you see an error dialog box, then the network services did not start correctly. Also, check the NT Event Log.

1. Click on **My Computer > Control Panel > Network > Services.** Make sure that the following services are listed:
   - Computer Browser
   - Microsoft Internet Information Server 2.0
   - NetBIOS Interface
   - RPC Configuration
   - Server
   - Workstation
2. Click the **Protocols** tab, and examine the Network Protocols. TCP/IP protocol should be the only one listed.
3. Click **OK**.

Return to Task List

Test the External Connection to the LAN

Begin

Return to Task List

To test the external IP connections, ping the IP Interface server and ping a known computer connected to your network.

1. Click **Start > Programs > Command Prompt**.
2. Type **ping *nnn.nnn.nnn.nnn*** (which is your IP address).
   - If everything is configured correctly, the system responds with the following message:

     Reply from *nnn.nnn.nnn.nnn*: bytes=32 time<##ms TTL=###
   - If no response, verify the IP-address information and check the connectivity, including the cabling.
3. At the command prompt, type **ping *nnn.nnn.nnn.nnn*** (which is the IP address of your gateway).
   - If everything is configured correctly, the system responds with the following message:

     Reply from *nnn.nnn.nnn.nnn*: bytes=32 time<##ms TTL=###
   - If no response, verify the IP address information and check the connectivity, including the cabling.
   - I f all else fails, click on **Start > Settings > Control Panel > Network**. Select the **Adapters** tab and highlight the [2] DEC adapter.
   - Click **Properties > Change**.
   - From the Duplex Mode drop down menu, select a setting that matches the switch/hub that the TN802B connects to. For example, 10BaseT Full Duplex or 10BaseT No Link Test.
4. At the command prompt, type **ping *nnn.nnn.nnn.nnn*** (which is the IP address of another external computer beyond the gateway).
   - If you have connectivity, the system responds with the following message:

     Reply from *nnn.nnn.nnn.nnn*: bytes=32 time<##ms TTL=###
   - If no response, verify the IP address information and check the connectivity, including the cabling. Consult your IP network administrator.
5. Type **exit** and press **Enter**.

Return to Task List

Test the IP Interface Onboard LAN Connections

Begin

Return to Task List

To test the onboard LAN connections, ping the IP Interface server and the processor on the TN802B IP Interface.

1. Click **Start > Programs > Command Prompt**.
2. Type **ping 192.11.13.9** (which is the IP address of the internal IP Interface server).

- If everything is configured correctly, the system responds with the following message:

  Reply from 192.11.13.9: bytes=32 time<##ms TTL=###

- If no response, verify the IP address information and check the connectivity, including the cabling.

3. At the command prompt, type **ping 192.11.13.8** (which is the IP address of the internal processor).
   - If you have connectivity, the system responds with the following message:

     Reply from 192.11.13.8: bytes=32 time<##ms TTL=###

   - If no response, verify the IP settings for Adapter [1].
4. Type **exit** and press **Enter**.

The TN802B IP Interface is now installed in the DEFINITY carrier and connected to the IP network. You can now use the Configuration Manager software (preinstalled on the TN802B hard disk) and Avaya Media Gateway switch administration to administer connections to other IP Trunk and ITS-E equipment.

Return to Task List

Upgrading a TN802 V3 (or later) to a TN802B (MedPro Mode)

Return to Task List

This section includes general information on adding the TN802/TN802B in MedPro mode and the Task list: Upgrade a TN802 to a TN802B.

If you have a TN802 V3 (or later) IP Interface, you must either replace it with a TN802B circuit pack or upgrade the existing TN802 V3 (or later) circuit pack to operate in MedPro mode. Also, to operate in the MedPro mode, the Avaya Media Gateway switch must be R10 or later.

Note:
The TN802 IP Interface must be V3 or later to upgrade to TN802B.

To upgrade the TN802 to a TN802B, you need the following hardware:

- Monitor, keyboard, and mouse to access the IP Interface's Windows NT environment or pcANYWHERE software.
- 10-Mbyte SanDisk PCMCIA flashcard loaded with the MedPro NT Application Install Wizard
- TN802B label

The upgrade adds or modifies the following directories or files on your computer's hard drive:

c:\dolan*

c:\mapd\dnld\medpro.img

c:\mapd\dnld\tmp.img

Task list: Upgrade a TN802 to a TN802B

Perform these tasks in order:

1. Connect the Monitor, Keyboard, and Mouse
2. Upgrade IP trunks (R7) to H.323 trunks

3 Upgrade to TN802B (R10)

4 Verify Circuit Packs

Connect the Monitor, Keyboard, and Mouse

Begin

Return to Task List

1 Attach a VGA monitor to the VGA connector of the TN802 IP Interface external cable assembly.

2 Attach the keyboard to the KEYBOARD connector of the external cable assembly.

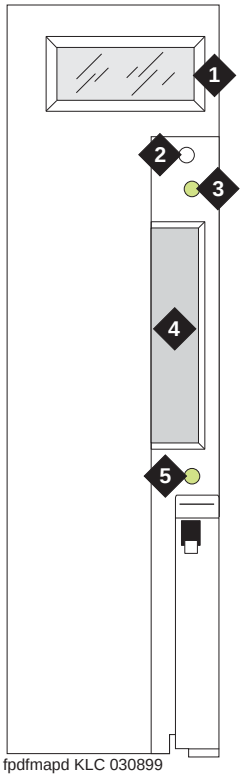
3 Attach the mouse to the MOUSE connector of the external cable assembly.

4 Plug the monitor into an AC power receptacle and turn it on.

5 If upgrading locally, reboot Windows NT by pressing the recessed reset button on the faceplate (see TN802B IP Interface faceplate) of the TN802B IP Interface until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), it is safe to remove the circuit pack.

6 After the TN802B is shut down, unlatch and pull the circuit pack out about 2 in. (5 cm) then re-insert it to restart the system.

TN802B IP Interface faceplate



fpdfmapd KLC 030899

Figure Notes:

[1] LCD display

[2] Reset button (recessed)

[3] Red board status LED

[4] PCMCIA card slot

[5] Yellow PCMCIA disk-in-use LED

Return to Task List

Upgrade IP trunks (R7) to H.323 trunks

Begin

Return to Task List

If there are existing IP trunk connections that you want to upgrade to H.323 trunk connections, do the following steps. Otherwise, go to Upgrade to TN802B (R10)

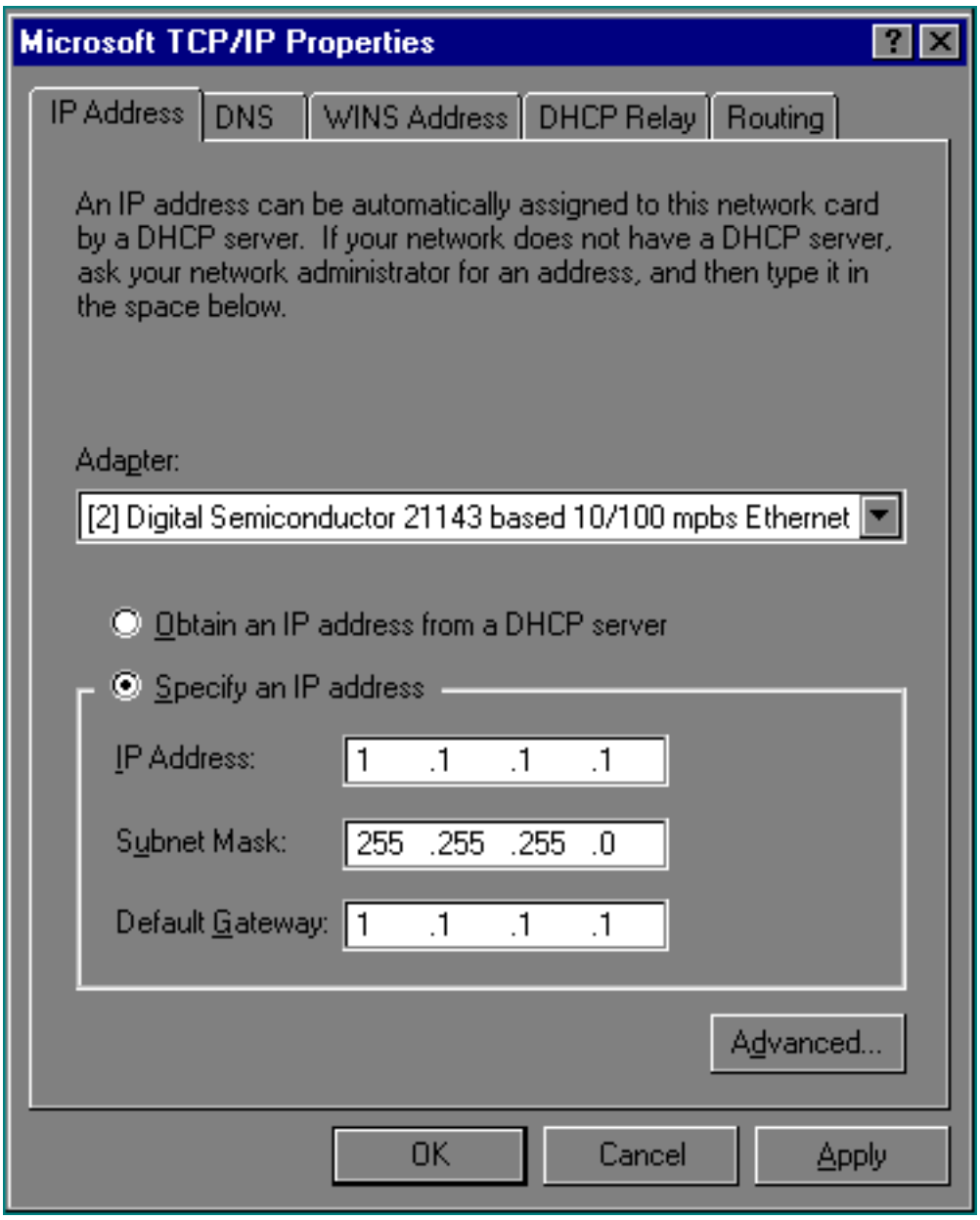
To upgrade an existing IP trunk (R7) to an H.323 trunk (R10) requires first getting IP information from the existing TN802 before upgrading the TN802 to TN802B.

1. Click on **My Computer > Control Panel > Network**.
2. Click the **Protocols** tab.
3. Select **TCP/IP Protocol** from the list.
4. Click the **Properties** option in the Network window**.** Write down the IP address, subnet address, and gateway address shown for adaptor [2] For an example, see TCP/IP Properties Window - IP Address, Adapter [2].

Note:
Do not use the addresses for adapter [1].

5. When done, click **OK**, **OK**.

TCP/IP Properties Window - IP Address, Adapter [2]


Microsoft TCP/IP Properties
IP Address
DNS
WINS Address
DHCP Relay
Routing
An IP address can be automatically assigned to this network card by a DHCP server. If your network does not have a DHCP server, ask your network administrator for an address, and then type it in the space below.
Adapter:
[2] Digital Semiconductor 21143 based 10/100 mpbs Ethernet
Obtain an IP address from a DHCP server
Specify an IP address
IP Address:
1 .1 .1 .1
Subnet Mask:
255 .255 .255 .0
Default Gateway:
1 .1 .1 .1
Advanced...
OK
Cancel
Apply

Return to Task List

Upgrade to TN802B (R10)

Begin

Return to Task List

Note:
The upgrade takes about 20 minutes

1. Insert the flash disk into the right most slot on the TN802B IP Interface. On the terminal, a dialog box assigns a drive letter; the default is (D:).
2. Right click on **Start > Explore** to open the Windows NT Explore pane and select the drive letter indicated in the previous step.
3. Double-click on **Medpro** and select the **Setup** icon.

4. Follow the Install Shield procedure to transfer all the necessary files to the TN802 IP Interface.
5. In the Finish dialog box, select **I will restart later**; *do not select* **Restart computer**.

   This would be a good time to read the **Readme.txt** file.
6. Click on **Start > Settings > Control Panel > Services**.
7. Select **IP Trunk** and click on **Startup**. *Do not click on* **Start**.
8. Under Startup Type, select **Disabled** and click **OK** to disable IP Trunk mode.

Note:
If IP trunk and MedPro services are both set to automatic, the TN802B defaults to IP Trunk and MedPro features cannot be used.

9. Select **MedPro** and click on **Startup**. *Do not click on* **Start**.
10. Under Startup Type, select **Automatic** and click **OK** to enable MedPro mode.

WARNING:
When connected remotely via pcANYWHERE, only use the pcANYWHERE Restart Host Computer button on the toolbar to restart Windows NT.

11. Click **Start > Shut Down** and select **Restart the computer?**

    or on the TN802 circuit pack:

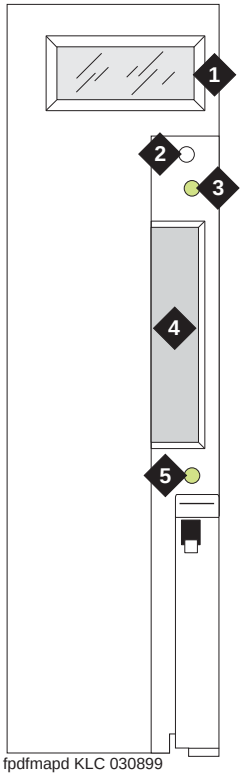
    Press the recessed reset button on the faceplate (see TN802B IP Interface faceplate) of the TN802B IP Interface until the LCD shows a flashing **MSHUT ***. When the flashing stops and the asterisk disappears (about 2 min), reseat the circuit pack to restart the system.

    or on the SAT:

    c. Type **busyout board *UUCSS*** and press **Enter**.
    d. Type **reset board *UUCSS*** and press **Enter**.
    e. Type **release board *UUCSS*** and press **Enter**.

    Once the system is completely initialized, the LCD reads **MEDPRO ***.
12. Affix the new TN802B label to the circuit pack.
13. Disconnect the monitor, keyboard, and mouse.

TN802B IP Interface faceplate



fpdfmapd KLC 030899

Figure Notes:

[1] LCD display

[2] Reset button (recessed)

[3] Red board status LED

[4] PCMCIA card slot

[5] Yellow PCMCIA disk-in-use LED

Return to Task List

Verify Circuit Packs

Begin

Return to Task List

1. Type **change circuit-pack** and press **Enter**.
2. On the Circuit Packs - Screen 1, check the Code column to see if it says DSMAPD or MedPro.
3. To correct it, go to the entry just above the TN802B that says DSMAPD.
4. Type **MEDPRO**, and press **Enter**. Changing the one entry automatically changes the entry above it. If it is in IP Trunk mode, you get the following error message:

   MedPro type requires TN802 with application. Type MEDPRO on circuit-packs form.
5. To complete the administration, refer to the *Administration for Network Connectivity for Avaya Communication Manager* book.

Circuit Packs - Screen 1

```
change circuit-packs                                          Page   1 of   5
                              CIRCUIT PACKS

        Cabinet: 1                              Carrier: A
                                              Carrier Type: processor

 Slot Code  Sf Mode   Name                Slot Code  Sf Mode   Name
                                           11:  MEDPRO      RESERVED-IP
01: TN754          DIGITAL LINE           12:  MEDPRO      RESERVED-IP
02: TN758          POOLED MODEM           13:  TN802  B      MAPD BOARD
03: TN2144        ANALOG LINE             14:
04: TN746  B      ANALOG LINE             15:
05                                        16:
06: TN771  C      MAINTENANCE/TEST
07: TN464  F      DS1 INTERFACE
08: TN2140        E&M TIE TRUNK
09: TN767  E      DS1 INTERFACE
10: TN799  B      CONTROL-LAN

  '#' indicates circuit pack conflict.
```

Return to Task List

Add Channel Service Units

A channel service unit (CSU) can be either an integrated CSU (ICSU) module or a 3150/3170 CSU module. See the relevant topics:

- About Installing an ICSU Module
- Installing the 120A3A CSU
- Installing a 3150/3170 Channel Service Unit

About Installing an ICSU Module

The integrated channel service unit (ICSU) is a combination of a 120A3A CSU module integrated with a DS1 circuit pack. A 700A DS1 loopback jack must be installed with this device.

See Installing the 120A3A CSU for step-by-step installation procedures for the 120A3A CSU.

Note:
Re-manufactured/repaired ICSU units and any manufactured after May 7, 2002 are marked as “120A3A.”

Check for required components

The ICSU package contains:

- 120A3A CSU module
- 700A DS1 loopback jack
- Cable H600-383

  4-pair modular cord
  Group 2, 50-foot (15.2 m) cable (standard)

Note:
If using cabling other than the H600-383, see H700-383-Equivalent Cable Guidelines.

- Cord DW8A-DE

  4-pair modular cord to alarm contacts

- DS1 circuit pack

  The basic ICSU requires a TN464E or TN767D or later. The enhanced integrated channel service unit can also be used with the TN2464 or TN2313.

H700-383-Equivalent Cable Guidelines

If using cabling other than the H700-383 provided with the 120A3A, observe the following guidelines:

- Use 24-gauge wire that provides individually shielded, twisted pairs for transmit and receive signals. Use the cable between the network interface and the 120A3A. Ground the shields of this cable only at the 120A3A end to avoid ground loops.
- Cabling between the network interface and 120A3A can have no bridge taps.

- If using standard house riser cable for connections between the network interface and the 120A3A, maintain a 100-pair separation between the receive and transmit twisted pairs.
- If using standard house riser cable for connections between the network interface and the 120A3A, allow no more than 2 cross connects to 110-type cross connect blocks.
- Never use quad cable (untwisted two pair telephone cable) in a DS1 line.
- Avoid mixing wires of different gauges in a DS1 line.

Installing the 120A3A CSU

Begin

120A3A Channel Service Unit Module shows the connection points.

Note:
Re-manufactured/repaired ICSU units and any manufactured after May 7, 2002 are marked as “120A3A.”

CAUTION:
Do not plug the 120A3A into any circuit packs other than a TN464F or TN767E (or later), or TN2464 or TN2313. Do not connect the 120A3A to any interface other than 700A DS1 loopback jack.

Be sure the DS1 circuit pack is set for 24-channel operation (1.544 Mbps). The 120A3A does not operate with the 32-channel interface. A switch on the circuit pack or administration sets this option.

CAUTION:
Always wear an anti-static wrist strap when installing a 120A3A module. Do not touch the external alarm cable when it is connected to the 120A3A. Static discharge can damage connector terminals and relays.

1. Unplug the DS1 circuit pack from its slot.
2. Install a 4C retainer in the 50-pin plug associated with the DS1 circuit pack slot.
3. Plug the 25-pair connector on the 120A3A directly into the plug associated with the DS1 circuit pack slot.
4. Secure the 4C retainer around the 120A3A.
5. Attach the supplied H700-383 cable to the 120A3A and to the 700A loopback jack.

   This cable is directional. To determine the end that connects to the 120A3A, perform a continuity test between pins 3 and 7. The end with this continuity is the 120A3A end. The shield is grounded only at the 120A3A end.

   Use the cable provided. If using cabling other than that provided with the 120A3A, see H700-383-Equivalent Cable Guidelines.
6. If using external alarm equipment, attach the supplied DW8 cable to the 120A3A and the external equipment. The maximum length of this cable depends on the alarm equipment.
7. If a TN464F is used, make sure the circuit pack is set for 24-channel operation. Set the switch on the circuit pack.
8. From the DS1 circuit-pack form of the system administration console, set the line compensation field to 0-133 feet (40.6 m).

9 Reset the 120A3A by reseating the DS1 circuit pack.

When you reinsert the DS1 circuit pack after installing a 120A3A CSU the 120A3A resets. The DS1 circuit pack initializes and tests the 120A3A. When initialization and testing is complete, the green LED goes off. If the RED indicator is OFF after the test, the ICSU is working.

10 If the circuits do not pass the self test, troubleshoot the 120A3A as instructed in *Integrated CSU Module Installation and Operation*.

H700-383 Cable Pin Assignments provides the H700-383 cable pinouts. H700-383 Cable Lengths by Group Number provides the cable lengths for each cable group number.

120A3A Channel Service Unit Module

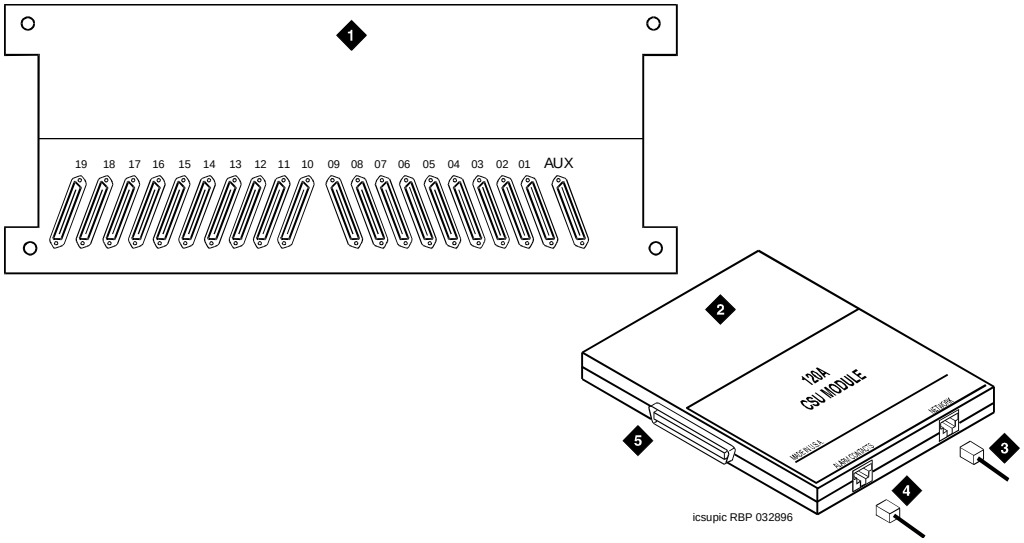


Figure Notes:

[1] Rear of carrier containing DS1 circuit pack

[2] 120A3A CSU

[3] 4-pair cord to network interface (H700-383)

[4] DW8A-DE 4-pair cord to alarm contacts (optional)

[5] To 25-pair connector on rear of carrier containing DS1 circuit pack

H700-383 Cable Pin Assignments

Pin	Color	Channel Service Unit Designation	Network Designation	Function
1	BK	Line in 0	R1	RCV
2	Y	Line in 1	T1	
3	Shield			
4	R	Line out 0	R	XMT
5	G	Line out 1	T	

H700-383 Cable Pin Assignments				
Pin	**Color**	**Channel Service Unit Designation**	**Network Designation**	**Function**
7	Shield			
7				Not assigned
8				Not assigned

H700-383 Cable Lengths by Group Number			
Group	**Length**	**Group**	**Length**
1	25 feet (7.7 m)	5	125 feet (38.1 m)
2	50 feet (15.2 m)	7	200 feet (71 m)
3	75 feet (22.9 m)	7	400 feet (122 m)
4	100 feet (30.5 m)	8	750 feet (198.1 m)

Installing a 3150/3170 Channel Service Unit

Begin

3150/3170 Channel Service Unit Connections shows a typical connection from the H600-348quad cable to the CSU, through the H600-307 network cable, and to the network interface through the smart jacks. The quad cable provides up to four connections using a 15-pin connector that plugs into the DTE jack on each CSU. The H600-348 quad cable may require an adapter cable.

1. Install the CSU as shown in 3150/3170 Channel Service Unit Connections.

   For some installations (such as a DS1 converter), use a Y-cable to connect the DEFINITY System to the quad cable. DS1 Converter Connections Using Double-Headed cable shows the Y Cable Lengths.

2. Label all cables.

3150/3170 Channel Service Unit Connections

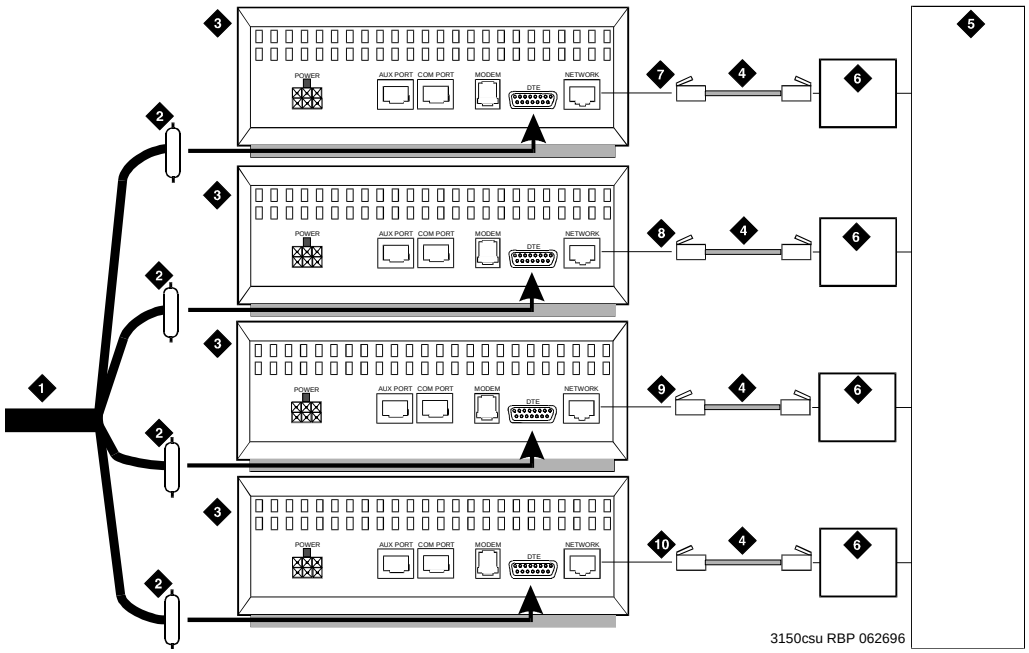


Figure Notes:

[1] H700-348 quad cable

[2] 15-pin male “D” connectors (to DTE jacks on CSU)

[3] Channel service unit (CSU)

[4] H700-307 cable (RJ-48C to RJ-48C)

[5] Network interface

[6] Smart jack (if provided)

[7] Cable A

[8] Cable B

[9] Cable C

[10]Cable D

DS1 Converter Connections Using Double-Headed cable

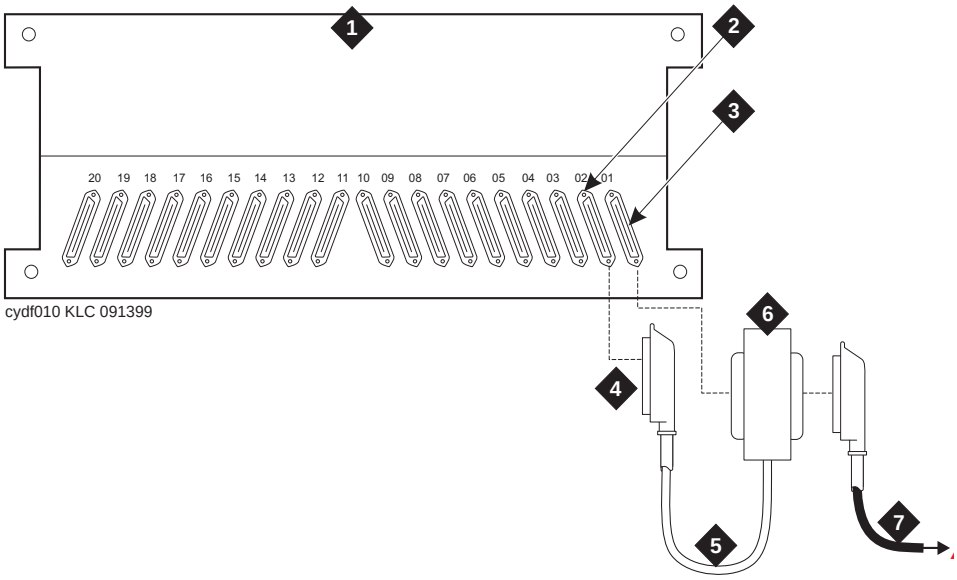


Figure Notes:

[1] Port carrier

[2] Backplane connector for TN570C EI

[3] Backplane connector for DS1 Converter

[4] 50-pair female connector to EI connector

[5] 14-in. (35.6 cm) Y cable

[6] 50-pin male/50-pin female double-headed connector

[7] H600-348 Quad Cable (with 50-pin male connector), which connects the Y cable to the 4 CSUs.

.

Y Cable Lengths	
Length	**Description**
14 in. (35.6 cm)	TN1654 circuit pack to adjacent EI circuit pack or TN573B SNI circuit pack in same carrier
70 in. (178 cm)	TN1654 circuit pack to EI circuit pack or SNI circuit pack in another carrier
14 in. (35.6 cm)	TN1654 circuit pack to fiber optic transceiver (DC-powered cabinets only). This cable is for intercabinet cabling only.

Install and Administer Trunks

These links provide installation and wiring examples for analog and digital trunks. These are examples only and actual wiring procedures may vary at each site. For IP trunks, see Add IP Solutions.

Task List: Add Trunks

- Install CAMA/E911 Trunk, with a separate task list
- Install ISDN—PRI Trunks, with a separate task list
- Adding CO, FX, WATS, and PCOL Trunks
- Adding DID Trunks
- Adding Tie Trunks
- Add DS1 Tie and OPS Trunks, with a separate task list
- Adding TTC Japanese 2-Mbit Trunks
- Add TN1654 DS1 Converter (r only), with a separate task list

Install CAMA/E911 Trunk

Return to Task List

The CAMA/E911 feature requires the TN429C/D CO trunk circuit packs (or later suffix).

Port Networks (PNs) that include TN429C circuit packs used to interface to CAMA trunks require some CPTR resources to be either TN744D V2 or TN2182B circuit packs, since TTR/CPTR or General Purpose Tone Receiver (GPTR) resources are selected from the pool available in the PN when needed.

Compatibility Tone Clock, TTR/CPTR, and GPTR Circuit Packs denotes which of these circuit packs are compatible and which are not affected.

Task List: Installing CAMA/E911 Trunks

1. Installing the Circuit Pack
2. Adding the Trunks
3. Changing the Feature Access Code
4. Changing the ARS Digit Analysis
5. Changing the Route Patterns
6. Changing the CAMA Numbering and Class of Restriction

Return to Task List

Compatibility Tone Clock, TTR/CPTR, and GPTR Circuit Packs				
Circuit Pack	**Description**	**Compatibility with CAMA Trunks in Same PN**	**Application**	**Notes**
TN744 TN744B TN744C TN744DV1	Call Classifier - Detector	Not Compatible	Used globally	8 GPTR/call classification ports. Used for call classification only initially prior to G3V3.3. Becomes a GPTR resource in G3V3.3 and later. Use TN744DV2 if CAMA feature is to be supported.
TN744DV2	Call Classifier - Detector	Compatible	Used globally	8 GPTR/call classification ports. Required in PN supporting CAMA trunks if GPTR resources are required in excess of those on the TN2182BV2. Also required (if the TN768 or TN780 tone clocks are used) in place of TN748, TN744, and TN744B and TN744C.
TN748C TN748D	Touch Tone Detector / Call Progress Tone Detector	Not Compatible	Used in the U.S. and a few other countries	4 TTR and 2 CPTR ports. Used in combination with the TN756, TN768, or TN780 in many countries initially in versions prior to G3V3.3. Use TN744DV2 if CAMA feature is to be supported.

Compatibility Tone Clock, TTR/CPTR, and GPTR Circuit Packs				
Circuit Pack	**Description**	**Compatibility with CAMA Trunks in Same PN**	**Application**	**Notes**
TN756	Tone Detector Generator	Not Compatible	Used in the U.S. and a few other countries	Tone detector/tone clock with 4 TTR and 2 CPTR ports. Used in combination with the TN748 in many countries initially in versions prior to G3V3.3. Used only with SCC/ESCC cabinets with no EPNs, no duplication, no ASAI. Use TN2182BV2 if CAMA feature is to be supported.
TN768	Tone Clock	Not Affected	Used in the U.S. and many other countries	Tone clock only, no TTR/CPTR functionality. Typically found with TN748 circuit packs in the U.S. Use TN744DV2 instead of TN748 with CAMA.
TN780	Tone Clock	Not Affected	Used in the U.S. (infrequently) for Stratum 3 clocking and used in many other countries	Tone clock only, no TTR/CPTR functionality. Typically found with TN748 circuit packs in the U.S. Use TN744DV2 instead of TN748 with CAMA.
TN2182 TN2182B	Tone Detector/ Tone Generator/ Call Classifier	Compatible	Used globally	Tone clock plus 8 GPTR/call classification ports. Use TN2182B if CAMA feature is to be supported.

Installing the Circuit Pack

Begin

Return to Task List

1 Insert the TN429C or later CO trunk circuit pack in any available port slot. Be sure the TN744D Call Classifier - Detector circuit pack is Vintage 2 or later.

2 Wire the CAMA trunk to the MDF (the trunk from the CO). Refer to the pinouts in Circuit Pack and Auxiliary Equipment Leads (Pinout Charts) for 2- and 4-wire analog and digital lines, 8, 16, and 24 ports; hybrid line; MET line; AUX and CO trunk or Circuit Pack and Auxiliary Equipment Leads (Pinout Charts) for 3-wire CO trunk, DID/DIOD trunk, tie and DS1 tie trunk, 2- and 4-wire ISDN-BRI lines, packet data line, and 4 port DIOD.

Adding the Trunks

Begin

Return to Task List

1 At the prompt, type **add trunk next** and press **Enter**.

2 On the Trunk Group screen CAMA Trunk Group form (page 1), in the **Group Type:** field, enter **cama**.

3 In the **Group Name:** field, enter the desired name.

4 In the **TAC:** field, enter the desired trunk access code.

5 In the **Outgoing Display:** field, enter **y**.

6 In the **CESID I Digits Sent:** field, enter the number directed by the Central Office (CO) or the Public Safety Answering Point (PSAP).

7 Scroll to Administrable Timers form (page 3).

8 On the Administrable Timers screen (page 3), you may need to adjust these fields according to your CO. Scroll to Group Member Assignments form (page 5).

9 On the Group Member Assignments screen, in the **Port** field, add the trunk members and press **Enter** when finished.

CAMA Trunk Group form (page 1)

```
                                                          Page 1 of 11

                              TRUNK GROUP

Group Number: 1                   Group Type: cama      CDR Reports: y
  Group Name:  cama Trunk Group - E911  COR: 1     TN: 1       TAC: 701
   Direction: outgoing     Outgoing Display? y CESID I Digits Sent: 0
                             Busy Threshold: 99

ESID I Digits Sent: 0
                             Busy Threshold: 99

TRUNK PARAMETERS
         Trunk Type: wink-start
 Outgoing Dial Type: r1mf
  Trunk Termination: rc
```

Administrable Timers form (page 3)

```
                                                              Page 3 of 11
                                TRUNK GROUP

ADMINISTRABLE TIMERS

                                      Outgoing Disconnect (msec): 400
                                 Cama Outgoing Dial Guard (msec): 75
                                     Outgoing Glare Guard (msec): 1000

                                     Cama Wink Start Time (msec): 5000
 Outgoing End of Dial (sec): 1    Outgoing Seizure Response (sec): 4
                                    Disconnect Signal Error (sec): 30
```

Group Member Assignments form (page 5)

```
                                                              Page 5 of 11
                                TRUNK GROUP

                                      Administered Members (min/max):  1/2
GROUP MEMBER ASSIGNMENTS                  Total Administered Members:  2
     Port    Code    Sfx  Name

 1: 01C0401 TN429   C
 2: 01C0402 TN429   C
 3:
 4:
 5:
 6:
 7:
 8:
 9.
 10:
 11:
 12:
 13:
```

Return to Task List

Changing the Feature Access Code

Begin

Return to Task List

1. At the prompt, type **change feature-access-code** and press **Enter**.

   The Feature Access Code (FAC) form (page 1) appears.

2. In the **Auto Route Selection (ARS) Access Code 1:** field, administer the ARS access code (in the example above, type **9**) and press **Enter** (must match dial plan).

Feature Access Code (FAC) form (page 1)

```
                                                              Page 1 of 5
                              FEATURE ACCESS CODE (FAC)
         Abbreviated Dialing List1 Access Code: ____
         Abbreviated Dialing List2 Access Code: ____
         Abbreviated Dialing List3 Access Code: ____
Abbreviated Dial - Prgm Group List Access Code: ____
                     Announcement Access Code: ____
                      Answer Back Access Code: ____
      Auto Alternate Routing (AAR) Access Code: ____
        Auto Route Selection (ARS) Access Code 1: 9___  Access Code 2:
                  Automatic Callback Activation: ____  Deactivation:
 Call Forwarding Activation Busy/DA: ____  All: ____  Deactivation:
                        Call Park Access Code: ____
                      Call Pickup Access Code: ____
CAS Remote Hold/Answer Hold-Unhold Access Code: ____
                  CDR Account Code Access Code: ____
                               Change Coverage: ____
                  Data Origination Access Code: ____
                      Data Privacy Access Code: ____
              Directed Call Pickup Access Code: ____
     Emergency Access To Attendant Access Code: ____
   Extended Call Fwd Activate Busy D/A: ____  All: ____   Deactivation:
                Facility Test Calls Access Code: ____
                             Flash Access Code: ____
```

Return to Task List

Changing the ARS Digit Analysis

Begin

Return to Task List

1. At the prompt, enter **change ars analysis** <**9**> and press **Enter**.

   The ARS Digit Analysis Table appears.

2. In the **Dialed String** field, in the first empty row, enter **11**.
3. In the **Total Mn** field, enter **2**.
4. In the **Total Mx** field, enter **2**.
5. In the **Rte Pat** field, enter the desired Route Pattern (in the example, the route pattern is ***11***).

Note:
For the following step, if you are using the Attendant Crisis Alerting feature, type ***alrt*** instead of “emer.”

6. In **Call Type** field, enter **emer**.
7. On the next empty row, in the **Dialed String** field, type **911**.
8. In the **Total Mn** field, enter **3**.
9. In the **Total Mx** field, enter **3**.
10. In the **Rte Pat** field, type the desired Route Pattern (in the example, the route pattern is ***12***).

Note:
For the following step, if you are using the Attendant Crisis Alerting feature, type ***alrt*** instead of “emer.”

11 In the **Call Type** field, enter **emer** and press **Enter**.

ARS Digit Analysis Table

```
                          ARS DIGIT ANALYSIS TABLE
                      Partitioned Group Number:  _     Percent Full:    ___

     Dialed      Total  Rte Call Nd  ANI      Dialed      Total  Rte Call Nd ANI
     String      Mn Mx  Pat Type Num  Rq      String      Mn Mx  Pat Type Num Rq
9_________________ 7_ 7_  2__ hnpa ___ n _________________ __ __ ___ ____ ___ _
976_______________ 7_ 7_  den hnpa ___ n _________________ __ __ ___ ____ ___ _
11________________ 2_ 2_  11_ emer ___ n _________________ __ __ ___ ____ ___ _
911_______________ 3_ 3_  12_ emer ___ n _________________ __ __ ___ ____ ___ _
_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
_________________ __ __  ___ ____ ___ _ _________________ __ __ ___ ____ ___ _
```

Return to Task List

Changing the Route Patterns

Begin

Return to Task List

1 At the prompt, type **change route-pattern** <***number***> (the route pattern to be changed; in the example in Route Pattern form (Page 1, Pattern Number 11), the route pattern is ***11***) and press **Enter**.

2 On the Route Pattern screen, in **Grp. No**. field, enter the CAMA trunk group number.

3 In the **FRL** field, enter **0**.

Note:
For the following step, if the Central Office (CO) wants KP11ST as the dialed digit string, then leave blank. If the CO wants KP911ST, then insert a **9** in the **Inserted Digits** field.

4 Administer the **Inserted Digits** field if needed and press **Enter**.

5 At the prompt, type **change route-pattern** <***number***> (the route pattern to be changed; in Route Pattern form (Page 1, Pattern Number 12), the route pattern is ***12***) and press **Enter**.

6 On the Route Pattern screen, in **Grp. No**. field, type the CAMA trunk group number and press **Enter**.

7 In the **FRL** field, type **0**.

Note:
For the following step, if the Central Office (CO) wants KP911ST as the dialed digit string, then leave blank. If the CO wants KP11ST, then delete one digit.

8 Administer **No. Del Digits** field if needed and press **Enter**.

Route Pattern form (Page 1, Pattern Number 11)

```
                                                                Page 1 of X
                                Pattern Number: 11

   Grp.  FRL NPA Pfx Hop Toll No. Del Inserted                              IXC
   No.           Mrk Lmt List Digits  Digits
1: 1__   0  ___  _  __   __    __    ____________________________________ user
2: ___   _  ___  _  __   __    __    ____________________________________ user
3: ___   _  ___  _  __   __    __    ____________________________________ user
4: ___   _  ___  _  __   __    __    ____________________________________ user
5: ___   _  ___  _  __   __    __    ____________________________________ user
6: ___   _  ___  _  __   __    __    ____________________________________ user

     BCC VALUE  TSC CA-TSC   ITC  BCIE Service/Feature          Numbering LAR
    0 1 2 3 4 W    Request                                      Format
 1: y y y y y n  y none_____ both ept  outwats-bnd____ BAND: ___ ________  none
 2: y y y y y n  n          rest      ________________           ________  next
 3: y y y y y n  n          rest      ________________           ________  rehu
 4: y y y y y n  n          rest      ________________           ________  none
 5: y y y y y n  n          rest      ________________           ________  none
 6: y y y y y n  n          rest      ________________           ________  none
```

Route Pattern form (Page 1, Pattern Number 12)

```
                                                                Page 1 of X
                                Pattern Number: 12

   Grp.  FRL NPA Pfx Hop Toll No. Del Inserted                              IXC
   No.           Mrk Lmt List Digits  Digits
1: 1__   0  ___  _  __   __    1_    ____________________________________ user
2: ___   _  ___  _  __   __    __    ____________________________________ user
3: ___   _  ___  _  __   __    __    ____________________________________ user
4: ___   _  ___  _  __   __    __    ____________________________________ user
5: ___   _  ___  _  __   __    __    ____________________________________ user
6: ___   _  ___  _  __   __    __    ____________________________________ user

     BCC VALUE  TSC CA-TSC   ITC  BCIE Service/Feature          Numbering LAR
    0 1 2 3 4 W    Request                                      Format
 1: y y y y y n  y none_____ both ept  outwats-bnd____ BAND: ___ ________  none
 2: y y y y y n  n          rest      ________________           ________  next
 3: y y y y y n  n          rest      ________________           ________  rehu
 4: y y y y y n  n          rest      ________________           ________  none
 5: y y y y y n  n          rest      ________________           ________  none
 6: y y y y y n  n          rest      ________________           ________  none
```

Return to Task List

Changing the CAMA Numbering and Class of Restriction

Begin

Return to Task List

1. At the prompt, type **change cama-numbering** and press **Enter**.

   The CAMA Numbering Format form appears.

2. Enter you own system default in the **System CESID Default:** field, and press **Enter**.

   This is the number outpulsed when the extension code is not found in the CAMA Numbering table.

3. In the **Ext Len**, **Ext Code**, **CESID**, and **Total Length** fields, fill out to your own CAMA numbering plan and press **Enter**. Be sure to cover all extensions.

4. At the prompt, type **change cor** <***number***> (the class of restriction (COR) to be changed) and press **Enter**.

   The Class of Restriction form (page 1) appears.

5. Change all CORs that are defined for stations in order to remove any calling party restrictions for 911 calls.

6. Type **none** in the **Calling Party Restriction:** field, and press **Enter**.

7. Type **save translation** and press **Enter**.

CAMA Numbering Format form

```
                                                                Page 1 of 3
                        CAMA NUMBERING - E911 FORMAT

System CESID Default: 5241100_____

Ext  Ext                    Total          Ext  Ext                    Total
Len  Code      CESID        Length         Len  Code      CESID        Length
 4_  101__  5381234_____     7_              __  _____  ___________     __
 4_  1____  555_________     7_              __  _____  ____________    __
  __  _____  ____________     __              __  _____  ____________    __
 __  _____  ____________     __              __  _____  ____________    __
 __  _____  ____________     __              __  _____  ____________    __
 __  _____  ____________     __              __  _____  ____________    __
 __  _____  ____________     __              __  _____  ____________    __
```

Class of Restriction form (page 1)

```
                                                              Page 1 of 3
                      CLASS OF RESTRICTION

               COR Number: 10
          COR Description: supervisor

                      FRL: 0                                APLT? y
  Can Be Service Observed? n           Calling Party Restriction: none
Can Be A Service Observer? n            Called Party Restriction: none
        Time of Day Chart: 1       Forced Entry of Account Codes? n
         Priority Queuing? n                Direct Agent Calling? n
    Restriction Override: none       Facility Access Trunk Test? n
    Restricted Call List? n                 Can Change Coverage? n
  Unrestricted Call List?
            Access to MCT? y             Fully Restricted Service? n
  Category For MFC ANI:    7             Hear VDN of Origin Annc.? n
          Send ANI for MFE? n_             Add/Remove Agent Skills? n
Hear System Music on Hold? y   PASTE (Display PBX Data on Phone)? n
 Automatic Charge Display? n
                         Can Be Picked Up By Directed Call Pickup? n
                                    Can Use Directed Call Pickup? n
```

Return to Task List

Install ISDN—PRI Trunks

Return to Task List

If packet bus support for Avaya Media Gateway (si) must be added and TN750s must be installed as part of that support, then adding ISDN — PRI requires a service interruption. Notify the customer in advance as to when the addition will be carried out. See Add Packet Bus Support for further information.

Task List: Installing ISDN—PRI Trunks

1. Installing ISDN - PRI in North American
2. Installing ISDN - PRI Internationally
3. Add Packet Bus Support (ISDN PRI)
4. Add Circuit Packs (ISDN PRI)
5. Install Cables (ISDN PRI)
6. Enter Added Translations (ISDN PRI)
7. Resolve Alarms (ISDN PRI)
8. Save Translations (ISDN PRI)

Return to Task List

Installing ISDN - PRI in North American

Begin

Return to Task List

1. Use a TN767E (or later) DS1 or a TN464F DS1/E1 circuit pack for a signaling link and up to 23 ISDN — PRI Trunk Group members.
2. Install a Tone-Clock circuit pack to provide synchronization for the DS1 circuit pack.
3. If using a TN464F, then packet bus support has not been added, requiring greater than 4 PRI signaling groups, see Add Packet Bus Support for installation of additional circuit packs for packet bus support.

As an option to the TN768 or TN2182B Tone-Clock, a TN780 Tone-Clock (installed in the PPN) can interface external Stratum 3 synchronization for DS1.

Return to Task List

Installing ISDN - PRI Internationally

Begin

Return to Task List

1. Install a TN464C (or later) DS1/E1 circuit pack for the assignment of the 2 signaling channels and up to 30 ISDN — PRI Trunk Group members. Each E1 span provides 32 ports.
2. Install a Tone-Clock circuit pack to provide synchronization for the DS1/E1 circuit pack.
3. If packet bus support has not been added and greater than 8 PRI signaling groups are required, see Add Packet Bus Support for installation of additional circuit packs for packet bus support.

As an option to the TN2182B Tone-Clock, a TN780 Tone-Clock (installed in the PPN) can interface external Stratum 3 synchronization for DS1.

Return to Task List

Add Packet Bus Support (ISDN PRI)

Begin

Return to Task List

If packet bus support is not already installed, see Add Packet Bus Support and perform the steps.

Add Circuit Packs (ISDN PRI)

Begin

Return to Task List

1. Determine port assignment of circuit packs to be added.
2. Install the DS1 Interface circuit pack in the assigned carrier slot.
3. Install a TN748B (or later) (or the international TN420B/C) Tone Detector circuit pack if required.

Install Cables (ISDN PRI)

Begin

Return to Task List

Install cables from cabinet to MDF as required.

Enter Added Translations (ISDN PRI)

Begin

Return to Task List

Administer the forms listed under “Integrated Services Digital Network — Primary Rate Interface” in the *Administrator’s Guide for Avaya Communication Manager*.

Resolve Alarms (ISDN PRI)

Begin

Return to Task List

1. Examine the alarm log.
2. Resolve any alarms that may exist using the *Maintenance for Avaya MultiVantage DEFINITY Server* documentation.

Save Translations (ISDN PRI)

Begin

Return to Task List

1. If the system is High or Critical Reliability, type **status system 1** and press **Enter** to verify that the system is in the “active/standby” mode.
2. Type **save translation** and press **Enter**. This instructs the system to take all translation information in memory and write it to the translation cards.
3. Update backup cards, if necessary.

Adding CO, FX, WATS, and PCOL Trunks

Begin

Return to Task List

Each Central Office (CO), Foreign Exchange (FX), Wide Area Telecommunications Service (WATS), or Personal Central Office Line (PCOL) trunk is connected to 1 port of either an 8-port TN747 or to 1 of an assortment of non-U.S. CO Trunk circuit packs.

1. See Wiring Off-Premises Stations (TN1654 DS1 Converter) and install a CO trunk circuit pack in the assigned carrier slot (if an additional circuit pack is required).
2. Administer the Trunk Group screens listed under CO, FX, WATS, or PCOL Trunk Group in *Administrator’s Guide for Avaya Communication Manager*.
3. Determine the port assignment of the trunk from the Trunk Group screen.

Return to Task List

Adding DID Trunks

Begin

Return to Task List

Each Direct Inward Dial (DID) trunk connects to 1 port of an 8-port TN753 or to 1 of an assortment of non-US DID trunk circuit packs.

1. Determine the port assignment of the trunk from Trunk Group form.

2. See Wiring Off-Premises Stations (TN1654 DS1 Converter) and install a DID trunk circuit pack in assigned carrier slot (if an additional circuit pack is required).
3. Administer DID Trunk Group screens in *Administrator's Guide for Avaya Communication Manager*.

Return to Task List

Adding Tie Trunks

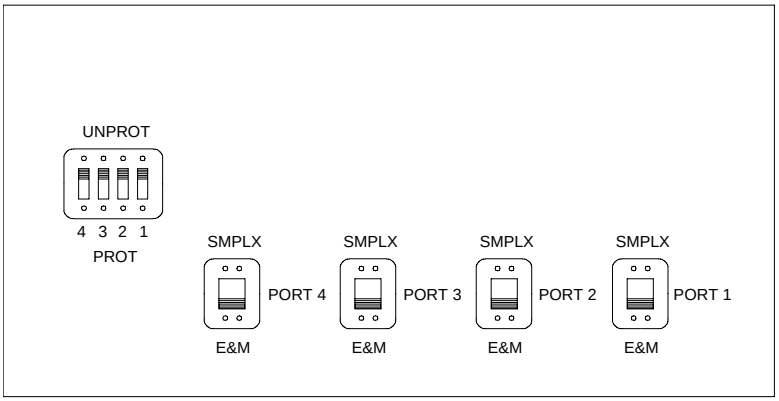
Begin

Return to Task List

Each tie trunk connects to 1 port of a 4-port TN760 or to an assortment of non-US tie trunk circuit packs.

1. Determine the port assignment of the trunk from Trunk Group form.
2. Install a TN760 or a non-United States tie trunk circuit pack in the assigned carrier slot (if an additional circuit pack is required).
3. For customer-owned (not leased) tie-trunk facilities (such as campus environments), TN760 circuit packs provide signaling capabilities beyond those specified by the industry-wide E & M standard. Use Tie Trunk Circuit Packs (Component Side) and Tie Trunk Option Switch Settings and Administration to choose the preferred signaling format, set switches on the TN760 circuit pack, and administer the port.
4. Administer forms listed under Tie Trunk Group in *Administrator's Guide for Avaya Communication Manager*.

Tie Trunk Circuit Packs (Component Side)



Tie Trunk Option Switch Settings and Administration						
Installation Situation		Preferred Signaling Format		E&M/SMPLX Switch	Prot/Unprot Switch	Administered Port
Circumstance	To	System	Far-End			
Co-Located	DEFINITY	E&M Type 1	E&M Type 1	E&M	Unprotected	Type 1
		Compatible	Standard			Compatible
Inter-Building	DEFINITY	Protected Type 1	Protected Type 1	E&M	Protected	Type 1
		Compatible	Standard Plus			Compatible
			Protection			
			Unit			
Co-Located	Net Integrated	E&M Type 1	Any PBX	E&M	Unprotected	Type 1
		Standard				

Return to Task List

Add DS1 Tie and OPS Trunks

Return to Task List

The TN722B DS1 Tie Trunk, TN767C (or later) DS1 Interface, and TN464C or later DS1 Interface circuit packs provide connections to a 1.544 Mbps or 2.08 Mbps DS1 facility as 24 independent 64-kbps trunks.

Adding DS1 tie-trunk service may require a service interruption; notify the customer in advance as to when the addition will be carried out.

Task List: Adding DS1 Tie and OPS Trunks

1. Upgrading from a TN722 to a TN767C
2. Disable Scheduled Maintenance and Alarm Origination to INADS (DS1 Tie and OPS Trunks)
3. Save Translations (DS1 Tie and OPS Trunks)
4. Shut Down DEFINITY LAN Gateway System (DS1 Tie and OPS Trunks)
5. Shut Down DEFINITY AUDIX System (DS1 Tie and OPS Trunks)
6. Power Down System (DS1 Tie and OPS Trunks)
7. Add Circuit Packs (DS1 Tie and OPS Trunks)
8. Power Up System (DS1 Tie and OPS Trunks)
9. Enter Added Translations (DS1 Tie and OPS Trunks)
10. Save Translations (DS1 Tie and OPS Trunks)
11. Resolve Alarms (DS1 Tie and OPS Trunks)
12. Deliver or Install License file (DS1 Tie and OPS Trunks)

13 Adding TTC Japanese 2-Mbit Trunks

Return to Task List

Upgrading from a TN722 to a TN767C

Begin

Return to Task List

1. Remove all TN722 trunk members from affected trunk groups.
2. Type **remove ds1 UUCSS** (the slot containing the TN722).
3. Remove the TN722 circuit pack.
4. Put the TN767C circuit pack into the same slot.
5. Wait until the red LED goes off. The hardware tests take 12 to 20 seconds to run. When the red LED goes off, the tests have completed.
6. If the red LED stays on, reseat the board and repeat this step.
7. Type **add ds1 PCSS**.
8. Continue with appropriate procedures to set up members of trunk groups.

Return to Task List

Disable Scheduled Maintenance and Alarm Origination to INADS (DS1 Tie and OPS Trunks)

Begin

Return to Task List

1. To prevent scheduled daily maintenance from interfering with the update or upgrade, type **change system-parameters maintenance** and press **Enter**.
2. If scheduled maintenance:
   - has begun: set the **Stop Time** field to 1 minute after the current time.
   - has not begun: set the **Start Time** field to at least 8 hours after the upgrade starts.

CAUTION:
If you do not disable Alarm Origination, the system may generate alarms, resulting in unnecessary trouble tickets.

3. Type **neither** in the **Alarm Origination to OSS Numbers** field and press **Enter**.

Return to Task List

Save Translations (DS1 Tie and OPS Trunks)

Begin

Return to Task List

1. If the system is high or critical reliability, type **status system 1** and press Enter to verify that the system is in the “active/standby” mode.

2 Type **save translation** and press Enter. This instructs the system to take all translation information in memory and write it to the translation card or removable media.

3 If the system contains a TN750/B Announcement circuit pack, type **display announcements** and press Enter. If administered recorded announcements are listed, type **list configuration software-version** press Enter. Check Page 2 of this form to see when the announcements were last saved. To save the current announcements, type **save announcements** and press Enter.

Shut Down DEFINITY LAN Gateway System (DS1 Tie and OPS Trunks)

Begin

Return to Task List

WARNING:
Neglecting to shut down the LAN Gateway assembly before powering down the system cabinet can damage the LAN Gateway disk.

1 Log onto the DEFINITY LAN Gateway.

2 From the main menu, click **Maintenance > Reset System > Shutdown**.

Shut Down DEFINITY AUDIX System (DS1 Tie and OPS Trunks)

Begin

A yellow caution sticker on the system's power unit notifies you to shut down the AUDIX before powering down the system.

WARNING:
Electrostatic discharge can severely damage sensitive electronic circuits. Before handling any electronic hardware, be sure to wear a grounding wrist strap or other static-dissipating device.

WARNING:
Neglecting to shut down an AUDIX assembly before powering down the system cabinet where it resides can damage the AUDIX disk.

1 Log into the AUDIX as **craft**.

Note:
If you have a **dadmin** login and password, you can use them instead of craft and the craft password.

2 Type **reset system shutdown** and press **Enter**.

3 Press **Enter** again to start the shutdown.

The **SHUTDOWN Completed** message displays when the AUDIX is successfully shutdown. This takes about 2 minutes.

CAUTION:
If leaving AUDIX System in the carrier, back it out about 2 in. (5 cm) to eliminate the possibility of damage due to power surges.

Return to Task List

Power Down System (DS1 Tie and OPS Trunks)

Begin

Return to Task List

Note:
Power down the PPN only if the existing Tone-Clock is being replaced in a standard reliability system.

1. At the PPN, set the main circuit breaker to OFF.
2. At each EPN, set the main circuit breaker to OFF.

Add Circuit Packs (DS1 Tie and OPS Trunks)

Begin

Return to Task List

1. Determine the port assignments of the circuit packs to be added.
2. Install the TN722B DS1 Tie Trunk, the TN767C DS1 Interface, or TN464C DS1 Interface circuit pack in assigned carrier slot.
3. Replace an existing TN756 Tone Detector/Generator circuit pack with:
   - TN768, TN780, or a non-United States TN419B Tone-Clock
   - TN748B or a non-United States TN420B Tone Detector
   - TN2182 Tone-Clock

Install Cables (DS1 Tie and OPS Trunks)

Begin

Return to Task List

Install H600-307 cable from the cabinet to a Channel Service Unit (CSU) and install cables from the CSU to the MDF as required.

Power Up System (DS1 Tie and OPS Trunks)

Begin

Return to Task List

1. At each EPN, set the main circuit breaker to ON.
2. At the PPN, set the main circuit breaker to ON.
3. The system performs the level 4 rebooting process, loading the system translations from the translation card or removable media. Rebooting takes 8 to 11 minutes.

4 After the system reboot is finished and all trouble is cleared, verify that the EMERGENCY TRANSFER CONTROL switch is set to AUTO. This restores the system to the normal mode.

Return to Task List

Enter Added Translations (DS1 Tie and OPS Trunks)

Begin

Return to Task List

Administer forms listed under “DS1 Tie Trunk Service” in *Administrator’s Guide for Avaya Communication Manager*.

Save Translations (DS1 Tie and OPS Trunks)

Begin

Return to Task List

1 If the system is high or critical reliability, type **status system 1** and press Enter to verify that the system is in the “active/standby” mode.

2 Type **save translation** and press Enter. This instructs the system to take all translation information in memory and write it to the translation card or removable media.

3 If the PPN contains a TN750 Announcement circuit pack, type **list configuration software-version** and press Enter.

4 If Page 2 of this form shows that recorded announcements were saved, these announcements can be restored using the restore announcements command. Type **restore announcements** and press Enter.

Return to Task List

Resolve Alarms (DS1 Tie and OPS Trunks)

Begin

Return to Task List

1 See your record of customer busy-outs and recreate the pre-upgrade busy-out states.

2 Type **display alarms** and press **ENTER**.

3 Examine the alarm log.

4 Resolve any alarms using the appropriate *Maintenance for Avaya MultiVantage and DEFINITY Server* book.

Deliver or Install License file (DS1 Tie and OPS Trunks)

Begin

Return to Task List

CAUTION:
This procedure must be done immediately after you upgrade the software. If the license file is not installed within 10 days, the switch enters a No-License mode and shuts down all call processing.

New Duplicated G3r installations only

1. Retrieve the RFA License File with both serial numbers from the RFA Application.
2. Type **set time** and press **Enter**.

   Ensure that the system date and time are set correctly.
3. Use one of these installation methods:
   - ~ Direct connection between the switch and RFA
   - ~ No connection between the switch and RFA
4. Type **save translation** and press Enter.

   After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.
5. Type **reset system 4** and press Enter.

   Wait until the system has completely reset before continuing.
6. Type **change cabinet 1** and press Enter.

   In the `Carrier Type` column change the “B” carrier to **processor** and submit the form.
7. Type **change system-parameters duplication** and press Enter.

   Set the `Enable Operation of SPE Duplication` field to **y** and submit the form.
8. Type **save translation** and press Enter.

   After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.
9. Type **reset system 3 preserve-license** (or **reset system 3 no-preserve-license**, since the License File has been saved in translations) and press Enter.

New simplex and upgraded G3r only

1. Type **save translation** and press **Enter**.

   After the translations have been copied (about 10 minutes), the system returns an error code, which must be a zero; otherwise, the translations are not copied.
2. Type **reset system 3** and press **Enter**.

   Wait until the system has completely reset before continuing.
3. If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.

   This disconnects (unregisters) all IP endpoints.
4. Type **set time** and press **Enter**.

   Ensure that the system date and time are set correctly.
5. Use one of these installation methods:
   - ~ Direct connection between the switch and RFA
   - ~ No connection between the switch and RFA

New or upgraded G3si only

1. Retrieve the RFA License File with both serial numbers from the RFA Application.

2 If the system has IP endpoints registered, unplug the Ethernet cable from the TN799 (C-LAN) circuit pack.

   This disconnects (unregisters) all IP endpoints.

3 Type **set time** and press Enter.

   Ensure that the system date and time are set correctly.

4 For *duplicated systems only* type **status system all** and press Enter.

   Ensure that the standby SPE is *not* in the maintenance state. If it is, wait for the maintenance state to finish.

5 Use one of these installation methods:

   ~ Direct connection between the switch and RFA

   ~ No connection between the switch and RFA

Direct connection between the switch and RFA

1 Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File.

Note:

This procedure sends the License File to the switch and installs it.

2 If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

   This re-registers the IP endpoints.

No connection between the switch and RFA

1 Go to the RFA website, and, following the instructions in the “Deliver to G3r/G3si/G3csi” chapter of the RFA Job Aid, deliver the License File to your laptop/PC.

2 Open the License Installation Tool (LIT) application at your laptop/PC.

3 Use the LIT instructions to add a switch connection profile to the tool.

4 Use the LIT instructions to install the License File on the switch.

5 If the system has IP endpoints registered, and you unplugged the Ethernet cable from the TN799 (C-LAN) circuit pack, replug the cable.

   This re-registers the IP endpoints.

CAUTION:

Return to Task List

Adding TTC Japanese 2-Mbit Trunks

Begin

Return to Task List

The TN2242 Japan 2-Mbit trunk interconnects the switch with other vendor equipment in Japan as well as to interconnect other switches through the Time Division Multiplexor device.

1 Determine the port assignment of the trunk from the Trunk Group screen.

2 Install a TN2242 circuit pack in assigned carrier slot.

3. Connect the H600-513 cable from the cabinet to the Time Division Multiplexor device.
4. To administer forms, see the following sections in the *Administrator's Guide for Avaya Communication Manager*.
   - For ISDN applications, see the ISDN Service section.
   - For non-ISDN applications, see the Managing Trunks section.

Return to Task List

Add TN1654 DS1 Converter (r only)

Return to Task List

The TN1654 DS1 converter circuit pack supports from 1 to 4 T1 (24 channel) or E1 (32 channel) facilities.

For more information on this DS1 converter, see

- Circuit Pack Switches
- Circuit Pack and Cabling (T1 Only)
- 75-ohm E1 Interface Cabling

Task List: Adding a TN1654 DS1 Converter

- Set Circuit Pack Switches (TN1654 DS1 Converter)
- Installing TN1654s in a Port Carrier
- Installing TN1654s in a Switch Node Carrier
- Connecting a Port Carrier to a Switch Node Carrier (TN1654 DS1 Converter)
- Connecting Through a Channel Service Unit
- Mounting the 127A (TN1654 DS1 Converter)

Return to Task List

Circuit Pack Switches

The configuration switches on the TN1654 must be set before the circuit pack is installed. The TN1654 can be configured for either T1 or E1 operation. All 4 facilities on the circuit pack are configured as a group. It is not possible to have T1 and E1 facilities supported on the same circuit pack at the same time.

The T1 line impedance is fixed at 100 ohms, and the T1 framing is selectable for ESF (Extended Super Frame) or D4 for each facility. The E1 facility line supports termination impedances of 120 ohms for twisted-pair and 75 ohms for coax wiring.

DS1 Converter Circuit Pack Switches shows the location of the switches. TN1654 DS1 Converter Switch Functions and TN1654 DS1 Converter Switch Settings show the switch-setting functions and positions, respectively.

Circuit Pack and Cabling (T1 Only)

The installation instructions are provided as examples only.

Note:
Be sure to label all of the cables as they are installed.

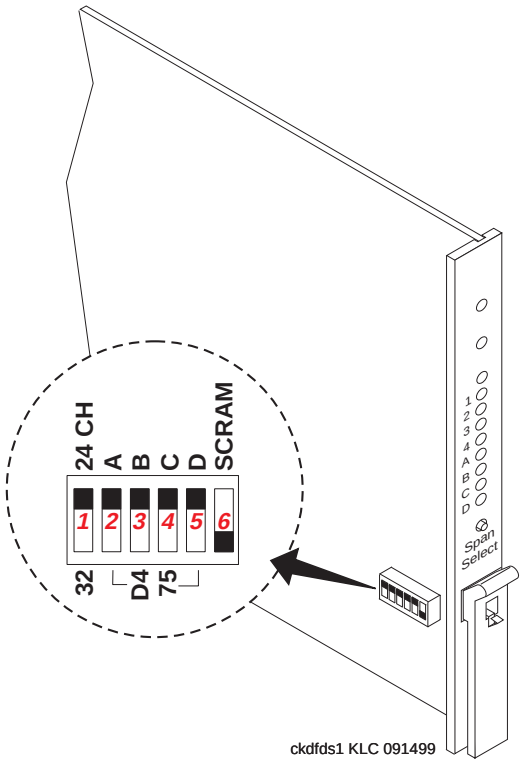
75-ohm E1 Interface Cabling

For certain markets with 75-ohm E1 service, the DS1 converter requires an adapter to convert the 120 ohms to 75 ohms. 127A BALUN Coaxial Adapter shows the 127A BALUN coaxial adapter.

Note:
Although the TN1654 DS1 converter supports 75 ohms, use the 127A BALUN to convert the 120 ohms to 75 ohms rather than the switch settings.

Note:
Set Circuit Pack Switches (TN1654 DS1 Converter) shows a typical connection.

DS1 Converter Circuit Pack Switches



TN1654 DS1 Converter Switch Functions	
Switch	**Function**
1	Type of Facility
2	Span A Line Impedance (E1 Only) Span A Framing (T1 Only)
3	Span B Line Impedance (E1 Only) Span B Framing (T1 Only)

TN1654 DS1 Converter Switch Functions	
Switch	**Function**
4	Span C Line Impedance (E1 Only) Span C Framing (T1 Only)
5	Span D Line Impedance (E1 Only) Span D Framing (T1 Only)
6	Force Fiber Data-Stream Scrambling

TN1654 DS1 Converter Switch Settings						
	1	**2**	**3**	**4**	**5**	**6**
up	T1	120 ohms ESF	120 ohms ESF	120 ohms ESF	120 ohms ESF	Enabled
down	E1[1]	75 ohms D4	75 ohms D4	75 ohms D4	75 ohms D4	Disabled

1.Although the TN1654 circuit pack supports 75 ohms, use the 127A BALUN to convert the 120 ohms to 75 ohms rather than the switch settings (see 75-ohm E1 Interface Cabling).

127A BALUN Coaxial Adapter

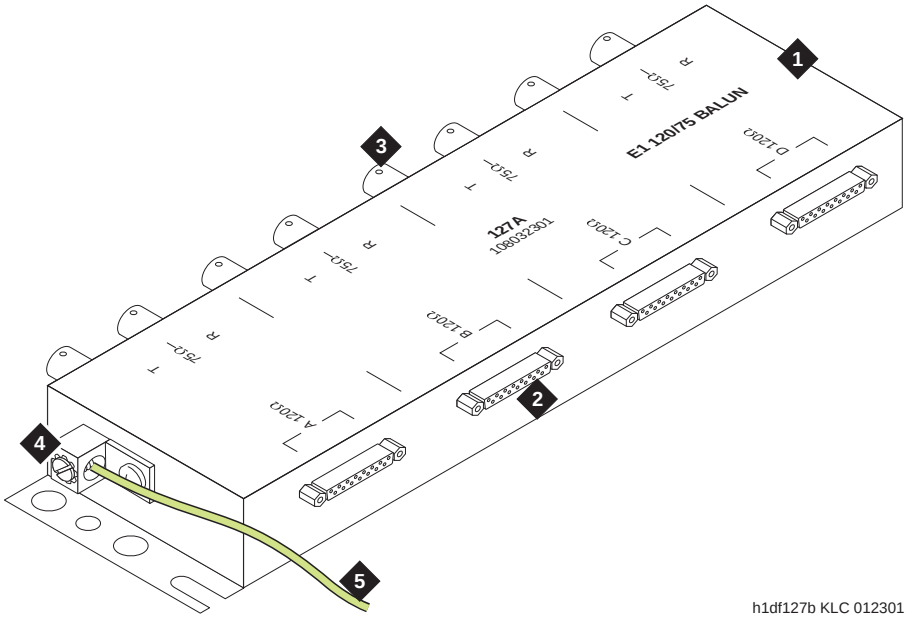


Figure Notes:

[1] 127A BALUN coaxial adapter

[2] Connect to quad cable (H600-348 or similar)

[3] BCN Connections to E1 network equipment

[4] Single-point ground connection

[5] >= 0.75 mm^2 (18 AWG) ground wire to ground terminal at MDF

DS1 Converter Connections for E1 75-ohm Service — Part 2

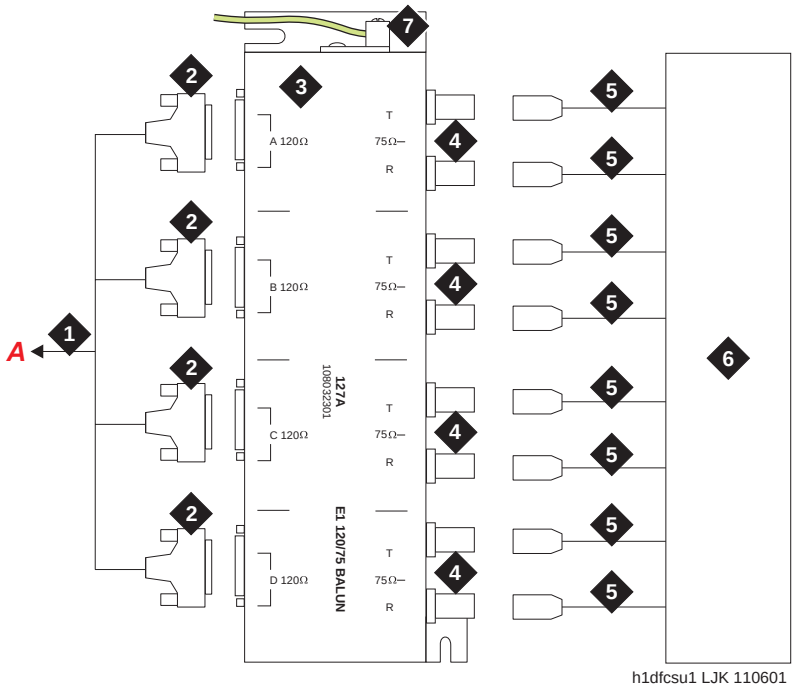


Figure Notes:

[1] H600-348 quad cable

[2] 15-pin male D connectors

[3] 127A BALUN coaxial adapter

[4] BNC connectors (transmit/receive) corresponding to each facility

[5] E1 network connection

[6] Network interface

Set Circuit Pack Switches (TN1654 DS1 Converter)

Begin

Return to Task List

1. Set the configuration switches on the TN1654 as required per site.
2. Set Switch 6 down (disabled).

   Switch 6 may not be present (or active) on all TN1654 DS1 Converter circuit packs.
3. Set Switch 1 up for T1 facilities.

   All subsequent facility switch settings (Switches 2-5) reflect T1 framing on each of the 4 facilities. See Examples of typical settings.
4. Set Switch 1 down for E1 facilities.

   All subsequent facility switch settings (Switches 2-5) reflect E1 impedance on each of the 4 facilities. See Examples of typical settings for examples.

Examples of typical settings	
Switch Settings	**Description**
swdft1es KLC 092799	T1 ESF Span A through D Framing set for ESF
swdft1d4 KLC 092799	T1 D4 Span A through D Framing set for D4
swdfe1es KLC 092799	E1 120 ohms ESF Span A through D Line Impedance set for ESF

Return to Task List

Installing TN1654s in a Port Carrier

Begin

Return to Task List

1. Install the TN1654 circuit pack in any slot in a Port Carrier close to a TN570C Expansion Interface circuit pack.
2. On the backplane, connect a 14-inch (35.56 cm) Y cable from the TN1654 circuit pack to the TN570C circuit pack. See DS1 Converter Connections — Part 1.
3. The Y cable used with the TN1654 is different than the Y cable used with the TN574. These cables are NOT interchangeable.
4. Connect an H600-348 Quad cable to the other side of the double-headed Y cable.
5. Skip to Connecting Through a Channel Service Unit.

DS1 Converter Connections — Part 1

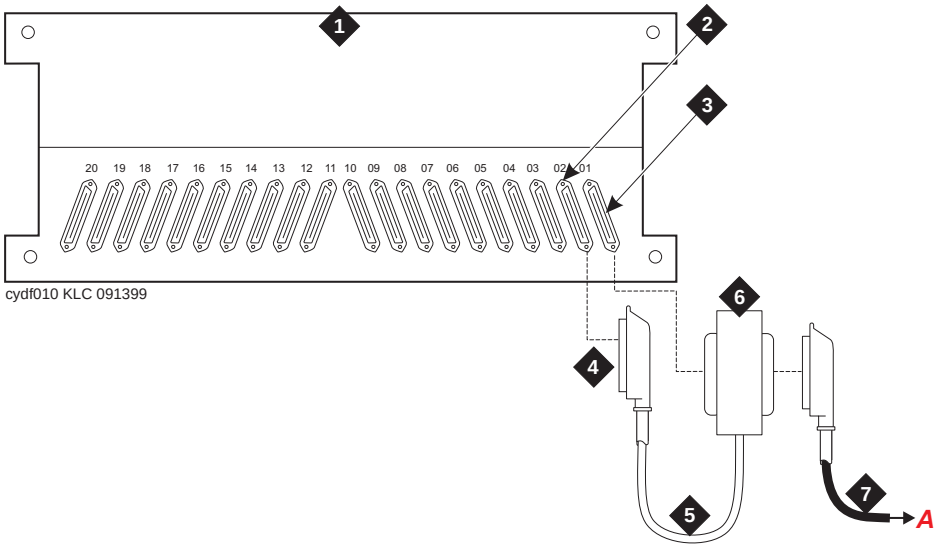


Figure Notes:

[1] Port cabinet

[2] Backplane connector for TN570C EI

[3] Backplane connector for TN1654 DS1 Converter

[4] 50-pair female connector to EI connector

[5] 14-in. (35.6 cm) Y cable

[6] 50-pin male/50-pin female double-headed connector

[7] H600-348 Quad Cable (with 50-pin male connector), which connects the Y cable to the 4 CSUs.

Return to Task List

Installing TN1654s in a Switch Node Carrier

Begin

Return to Task List

You can install up to 2 TN1654 circuit packs in a Switch Node Carrier.

1 Install the TN1654 circuit pack in either slot 1 or 21 of the Switch Node Carrier close to a TN573B SNI circuit pack.

CAUTION:
Install the TN1654 circuit pack in either slot 1 or slot 21. Installing it in any other slots can damage the circuit pack and the system. Do ***not*** do it.

2 On the backplane, connect a 14-inch (35.56 cm) Y cable from the TN1654 circuit pack to the TN573B circuit pack. See DS1 Converter Connections — Part 1.

CAUTION:
The Y cable used with the TN1654 circuit pack is different than the Y cable used with the TN574 circuit pack. These cables are NOT interchangeable.

3 Connect an H600-348 Quad cable to the other side of the Y cable.

4 Skip to Connecting Through a Channel Service Unit.

DS1 Converter Connections — Part 1

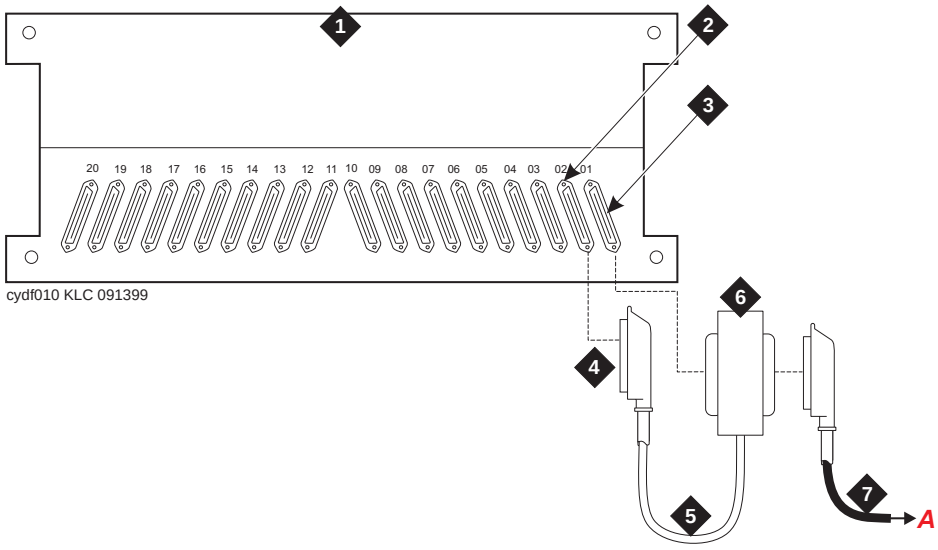


Figure Notes:

[1] Port cabinet

[2] Backplane connector for TN570C EI

[3] Backplane connector for TN1654 DS1 Converter

[4] 50-pair female connector to EI connector

[5] 14-in. (35.6 cm) Y cable

[6] 50-pin male/50-pin female double-headed connector

[7] H600-348 Quad Cable (with 50-pin male connector), which connects the Y cable to the 4 CSUs.

Return to Task List

Connecting a Port Carrier to a Switch Node Carrier (TN1654 DS1 Converter)

Begin

Return to Task List

1 When the TN1654 circuit pack is in a port carrier and the TN 573B SNI circuit pack is in the Switch Node Carrier, connect the two circuit packs with a 70-in. (178 cm) Y Cable.

CAUTION:
The Y cable used with the TN1654 circuit pack is different than the Y cable used with the TN574 circuit pack. These cables are NOT interchangeable.

2 Connect an H600-348 Quad cable to the other side of the Y cable.

Connecting Through a Channel Service Unit

Begin

Return to Task List

DS1 Converter Connections for T1 Service — Part 2 shows a typical connection for a T1 line, and DS1 Converter Connections for 120-ohm E1 Service — Part 2 shows a typical connection for an E1 line.

1. Connect the H600-348 Quad Cable to the DTE jacks on each of the 4 CSUs.
2. You may need an adapter cable to connect the H600-348 cable to the CSU (see Adapter Descriptions).
3. Connect one end of the H600-383 cable to the network jack on the CSU and the other end to the smart jack.

Connection to the remote-located system is the same as that shown in DS1 Converter Circuit Pack Switches and CAMA Numbering Format form.

Y Cable Lengths shows theY cable lengths.

The distinction between facility types is important when using TN1654 circuit packs. The facility used to carry control channel messages between the pair of DS1 converter circuit packs and all packet traffic is known as the primary facility. The facility used to backup and takeover for the primary facility in the event of primary facility failure is known as the secondary facility. The TN1654 allows either facility, A or B, to be a primary channel. The control channel is restricted to only the A or B facilities. This permits full 24-channel access (T1) or 31-channel access (E1) for facilities C and D to support user traffic.

DS1 Converter Connections for T1 Service — Part 2

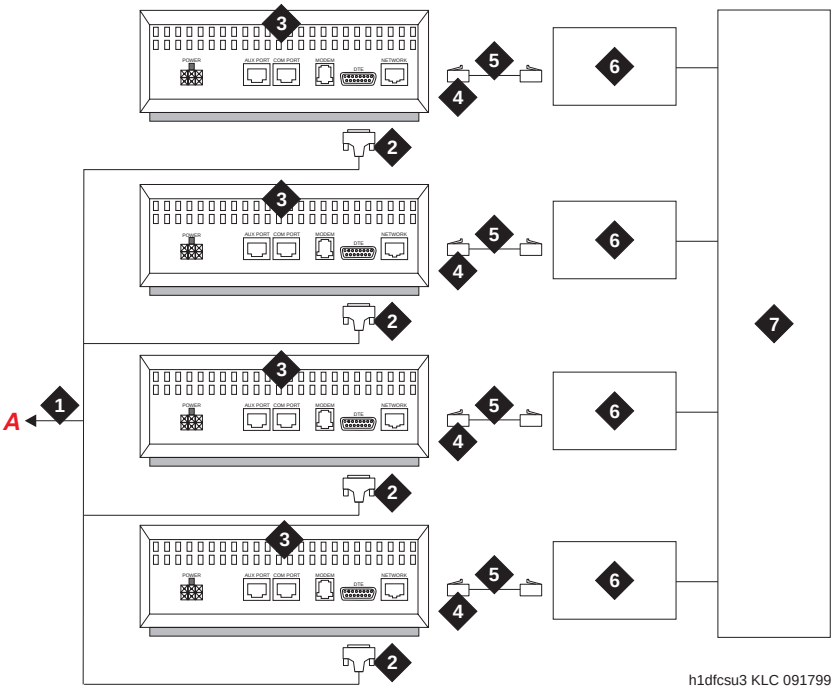


Figure Notes:

[1] H600-348 Quad Cable

[2] 15-Pin Male D Connectors (to DTE Jacks on CSU)

[3] Channel Service Unit (CSU)

[4] H600-383 Cable (RJ-48C to RJ-48C)

[5] Network Interface

[6] 700A Loopback Jack

[7] Cables

DS1 Converter Connections for 120-ohm E1 Service — Part 2

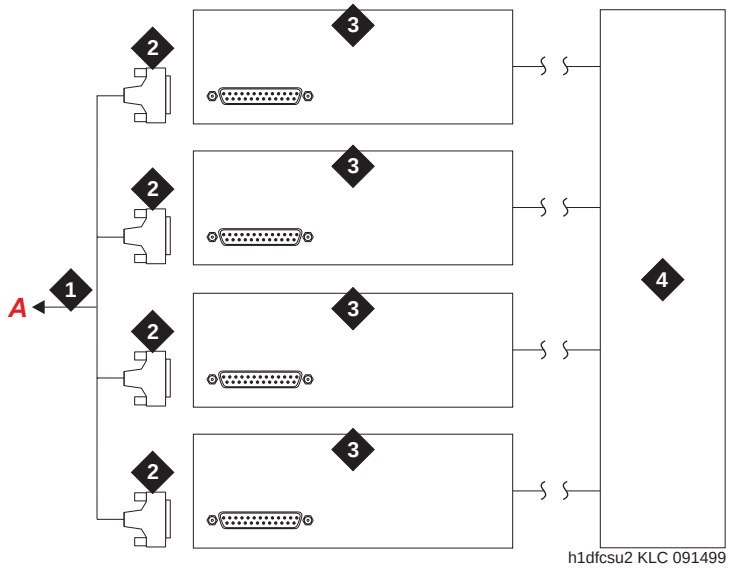


Figure Notes:

[1] H600-348 Quad Cable

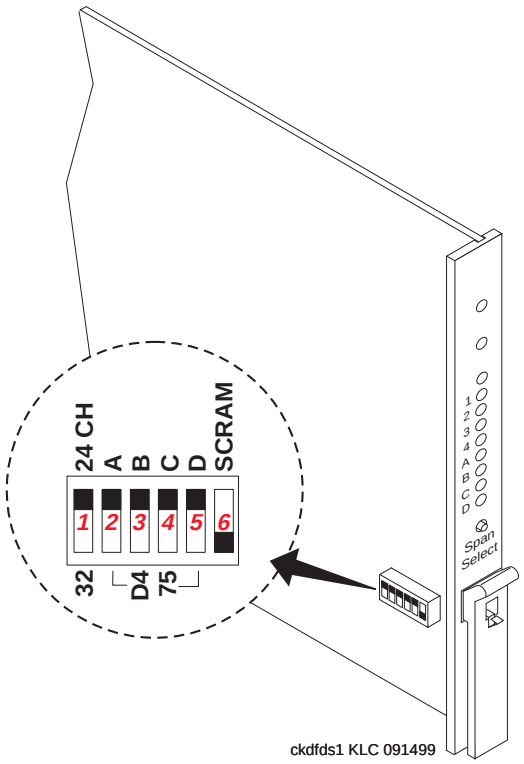
[2] 15-pin male D connectors (to DTE jacks on customer-provided network-interface equipment)

[3] Customer-provided network-interface equipment

[4] Network interface

Adapter Descriptions		
Type	**Color**	**Description**
Straight through	Black	Cable with a DB15 connector on one end and an RJ48 connector on the other
Rollover	Gray	Cable with a DB15 connector on one end and an RJ48 connector on the other
Null	Black	A DB15M to DB15F rollover/null adapter.

DS1 Converter Circuit Pack Switches



CAMA Numbering Format form

```
                                                          Page 1 of 3
                        CAMA NUMBERING - E911 FORMAT

System CESID Default: 5241100______

Ext  Ext                    Total          Ext  Ext                    Total
Len  Code      CESID        Length         Len  Code      CESID        Length
 4_  101__  5381234_____     7_              __  _____  ____________    __
 4_  1____  555_________     7_              __  _____  ____________    __
  __  _____  _____________     __             __  _____  _____________     __
 __  _____  _____________     __             __  _____  _____________     __
 __  _____  _____________     __             __  _____  _____________     __
 __  _____  _____________     __             __  _____  _____________     __
 __  _____  _____________     __             __  _____  _____________     __
```

Y Cable Lengths	
Length	**Description**
14 in. (35.6 cm)	TN1654 circuit pack to adjacent EI circuit pack or TN573B SNI circuit pack in same carrier
70 in. (178 cm)	TN1654 circuit pack to EI circuit pack or SNI circuit pack in another carrier
14 in. (35.6 cm)	TN1654 circuit pack to fiber optic transceiver (DC-powered cabinets only). This cable is for intercabinet cabling only.

Return to Task List

Mounting the 127A (TN1654 DS1 Converter)

Begin

Return to Task List

Note:
In Norway, Sweden, Denmark, and Finland, the 127A can be used only with MCCs or DC-powered SCCs.

1. Mount the 127A vertically near the main distribution frame (MDF). The 127A case has tabs for screw-mounting and cutouts for snap-mounting the unit in a 89-type mounting bracket.
2. Attach a ground wire (required) between the 127A and the MDF ground terminal bar. The wire must be green/yellow and no smaller than 0.75 mm^2 (18 AWG).
3. Strip both ends of an appropriate length of wire.
4. Insert one end of the wire into the MDF ground bar and secure.
5. Insert the other end into the screw-connection in the end of the 127A and secure. See 127A BALUN Coaxial Adapter.
6. Connect the H600-348 quad cable to the 4 DB-15 connectors provided on the 127A adapter.
7. Connect the transmit connectors to the connectors marked T and the receiver connectors to the connectors marked R.
8. Connect the other end of the cables to whatever connects to the network.

127A BALUN Coaxial Adapter

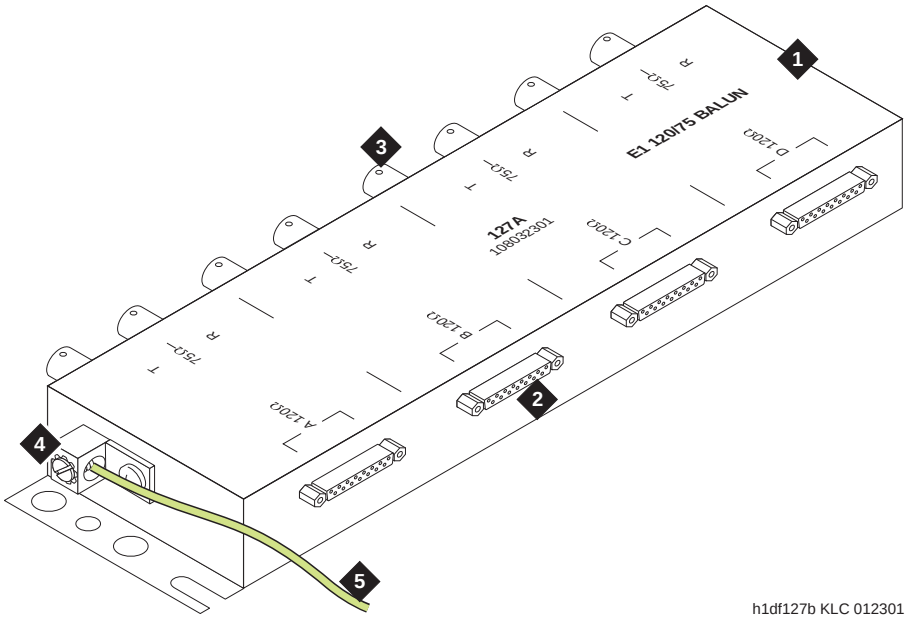


Figure Notes:

[1] 127A BALUN coaxial adapter

[2] Connect to quad cable (H600-348 or similar)

[3] BCN Connections to E1 network equipment

[4] Single-point ground connection

[5] >= 0.75 mm^2 (18 AWG) ground wire to ground terminal at MDF

Return to Task List

Wiring Off-Premises Stations (TN1654 DS1 Converter)

Begin

Return to Task List

The cabling outside the building for off-premises stations is provided by the local telephone company. The off-premises stations can appear on any of the RJ21X network interfaces provided for the Central Office (CO) trunks.

CAUTION:
Only an FCC-approved (or equivalent) analog type telephone, for example, a 2500-type, can be used as an off-premises station. The TN746B and TN2183 Analog Line circuit packs can be used for off-premises stations.

1. Connect an A25D cable between the RJ21X network interface and a sneak fuse panel. See Install Sneak Fuse Panels for details.
2. At the MDF, connect jumper wires between 1 row/connecting block in the green field and up to 3 rows/connecting blocks in the purple field to concentrate the analog line pairs.
3. Connect an A25D cable between the sneak fuse panel and the 110-type terminal block connector associated with the green row in Step 2.
4. Install a green label on the 110-type terminal block to identify the remote location.
5. Administer per the *Administrator's Guide for Avaya Communication Manager*.

Return to Task List

Installing the Stratum 3 Clock

Use this task list to install a Stratum 3 clock.

Task List: Install the Stratum 3 clock

1. Unpack and Inspect Stratum 3 Clock Cabinet
2. Install and Position Stratum 3 Clock Cabinet
3. Connect AC Power to Stratum 3 Clock Cabinet
4. Check and Connect Commercial AC Power
5. Connect DC Power and Ground to Stratum 3 Clock Cabinet
6. Connect Clock Cabinet Grounding
7. Connect Stratum 3 Clock DC Power
8. Set the Clock Options
9. Cable the Stratum 3 Clock
10. Install the Stratum 3 Clock Wiring

Unpack and Inspect Stratum 3 Clock Cabinet

Begin

Return to Task List

1. Check the status of the SHOCKWATCH and/or TILTWATCH indicators on the cardboard container. If the container has been jarred or tilted beyond specifications, the indicators are red, indicating possible damage.
2. Remove all packing material.
3. Remove front door and rear screw-on panels from the cabinet.
4. Inspect the cabinet for damage. Report any damage per local instructions.

Install and Position Stratum 3 Clock Cabinet

Begin

Return to Task List

Check the location of the AC power receptacle. The receptacle must be on a separately fused circuit that is not controlled by a wall switch. It must be located within 10 ft (3 m) of the cabinet and should be located outside the MDF area.

1. Position the clock cabinet in the designated location.
2. If earthquake protection is required, skip to Install Earthquake Protection for SCC or Install Earthquake Protection for MCC.
3. If earthquake protection is not required, level the cabinets and adjust and lock the cabinet stabilizing bolts to keep the cabinet from moving.

Return to Task List

Connect AC Power to Stratum 3 Clock Cabinet

Begin

Return to Task List

The clock cabinet requires a 120 VAC, 15 amp receptacle. The green wire ground provided by the receptacle is sufficient. The clock cabinet does not require a ground connection back to the single-point ground.

Check and Connect Commercial AC Power

Begin

Return to Task List

Before powering up the system, check the AC power using a KS-20599 digital voltmeter (DVM) (or equivalent).

1. Set the DVM to the 250 volt range.
2. Carefully measure the voltage between the hot and neutral side of the receptacle. The neutral wire is white, the hot wire is black.
3. Verify the meter reads 106 to 128 VAC. If not, have a qualified electrician correct the problem.
4. Measure the voltage between the neutral and ground side of the receptacle. The ground wire is green.
5. Verify the meter reads 0 VAC. If not, have a qualified electrician correct the problem.
6. Set all cabinet power modules OFF. Plug the AC power cable into the receptacle.

Return to Task List

Connect DC Power and Ground to Stratum 3 Clock Cabinet

Begin

Return to Task List

Provide power for the clock cabinet from the same DC power plant as the DEFINITY ECS.

Ground the clock cabinet to the DC power plant.

Connect Clock Cabinet Grounding

Begin

Return to Task List

1. Measure and cut a 6 AWG (#40) (16 mm^2) wire long enough to reach from the clock cabinet to the ground discharge bar in the DC power plant.
2. Insert 1 end of the wire into the ground lug on the clock cabinet and tighten the screw.
3. Attach the lug to the receptacle cover. Be sure the lug and cabinet ground wires connect to separate screws on the receptacle cover.
4. Route the ground wire to the DC power plant and connect to DISCH GRD inside the cabinet.

Connect Stratum 3 Clock DC Power

Begin

Return to Task List

1. Set the clock cabinet circuit breaker at the DC power plant OFF.
2. At the clock cabinet, connect a 6 AWG (#40) (16 mm^2) ground wire to the -48V terminal on the terminal strip.
3. At the clock cabinet, connect a 6 AWG (#40) (16 mm^2) wire to the -48VRTN terminal on the terminal strip.
4. Route the wires out of the cabinet and to the DC power plant.
5. At the DC power plant, connect the -48V wire to the DC OUTPUT circuit breaker.
6. At the DC power plant, connect the -48VRTN wire to the DISCH GRD bar.

Return to Task List

Set the Clock Options

Begin

Return to Task List

There are four sets of option switches on the clock.

1. Set the options on the Clock Input (CI) circuit pack according to CI Option Switch Settings.
2. Set the options on the Stratum 3 Clock (ST3) circuit pack according to ST3 Clock Circuit Pack Option Switch Settings.
3. Set the options on the Composite Clock Timing Output (TOCA) circuit pack according to Composite Clock Timing Output (TOCA) Circuit Pack.
4. Set the Stratum 2/Stratum 3 switch to the STRATUM 3 position.

CI Option Switch Settings

Switch	Function	Position
1	T1 Select	OFF = enable (default) ON = disable
2	CC Select	OFF = enable ON = disable (default)
3	Framing Select	OFF = ESF ON = D4 (default)
4	BX.25	OFF = enable ON = disable (default)

ST3 Clock Circuit Pack Option Switch Settings	
Switch	**Status/Results**
SW1 Minor Alarm Control	OFF = minor alarm never output ON = minor alarm is output if holdover occurs
SW2 Major Alarm Control	OFF = major alarm is output and fail lamp lights if 5 VDC power is lost and 4 kHz output is lost ON = major alarm is output and fail lamp lights if 5 VDC power is lost and 4 kHz output is lost and holdover occurs

Note:
Only SW 1 and SW2 are used. SW1 controls the output of alarm signals from the Stratum 3 Clock circuit pack.

Composite Clock Timing Output (TOCA) Circuit Pack								
Switch		**Range**						
500	**1000**	**1 ft (0.3 m)**	**500 ft (152 m)**	**1000 ft (305 m)**	**1500 ft (457 m)**	**2000 ft (610 m)**	**2500 ft (762 m)**	**3000 ft (914 m)**
OFF	OFF	<----------						
ON	OFF		<----------					
OFF	ON			<----------				
ON	ON				<----------			

Note:
Set switches 1 and 2 according to the distance from the Stratum 3 clock to the DEFINITY System. Set switch 3 to ON. Set switch 4 to OFF.

Return to Task List

Cable the Stratum 3 Clock

Begin

Return to Task List

Typical Connections to Stratum 3 Clock shows typical connections to a Stratum 3 Clock cabinet. Connections are made through the yellow field cross-connect. A custom “Y” cable (H600-274) connects the CSU to the DS1 circuit pack and taps off the input for the Stratum 3 Clock. A resistor built into the cable to provides the necessary isolation between the system and the clock. The “Y” cable plugs directly into the CSU and connects to standard cables for interface to the system and the yellow field on the MDF.

The H600-307 cable connects the system end of the “Y” cable to a DS1 circuit pack (shown as TN464/2464, TN722, or TN767). The B25A cable connects the clock end of the “Y” cable to the yellow field on the MDF.

Typical Connections to Stratum 3 Clock

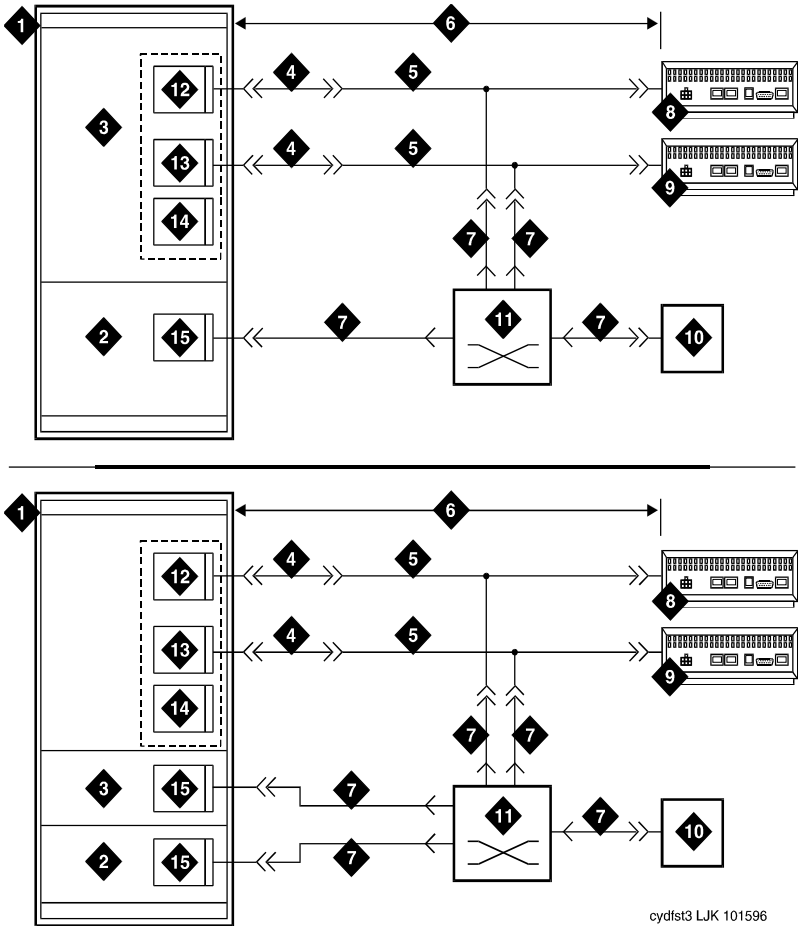


Figure Notes:

[1] SCC1 Cabinet (PPN)

[2] “A” Position

[3] “B” Position

[4] H600-307 Cable

[5] H600-247 G2 Cable

[6] 1300 Feet (396 m)

[7] B25A (Male-to-Female) Cable

[8] Channel Service Unit (Secondary)

[9] Channel Service Unit (Primary)

[10]Stratum 3 Clock

[11]Main Distribution Frame (MDF)

[12]DS1/E1 Interface Circuit Pack

[13]DS1 Tie Trunk Circuit Pack

[14]DS1 Interface Circuit Pack

[15]Tone-Clock Circuit Pack

Return to Task List

Install the Stratum 3 Clock Wiring

Begin

Return to Task List

1. Connect the B25A cables from the TN780 connector panel slot on the system cabinet and the Stratum 3 Clock to the cross-connect module in the yellow field.
2. Connect the CSU plug end of the H-600-274 (Y) cable to the primary CSU. Route an H600-307 cable from the DS1 connector panel slot on the system cabinet to the connector on the “SYSTEM” end of the “Y” cable.
3. Route a B25A cable from the “CLOCK” end of the “Y” cable to the cross-connect module in the yellow field.
4. Repeat steps 2 and 3 for the secondary CSU. The maximum allowable cabling distance between the Stratum 3 clock and the CSU is shown in Maximum Cabling Distance.
5. For standard reliability systems, refer to Cross-Connects for Standard Reliability to cross-connect the TN780 and “CLOCK” end connections to the Stratum 3 Clock connections on the cross-connect module.
6. For high or critical reliability systems, refer to Cross-Connects for High or Critical Reliability to cross-connect the TN780 and “CLOCK” end connections to the Stratum 3 Clock connections on the cross-connect module.
7. The common cross-connection from the TN780 in A and B carriers to the Stratum 3 Clock should be done by bridging the jumper wires.
8. Dress the cables down sides of the cabinet and run through the Cable Slack Manager, if provided.
9. Administer per the *Administrator’s Guide for Avaya Communication Manager*.

Maximum Cabling Distance

Channel Service Unit (CSU)	Maximum Cabling Distance
551A	85 Feet (26 m)
551V	85 Feet (26 m)
551V EFS/R	655 Feet (199.6 m)
EFS T1	655 Feet (199.6 m)

Cross-Connects for Standard Reliability

From: Stratum 3 Clock			To: Y Cable Clock End (Primary)		
Lead Designation	Lead Color	Connecting Block Terminal	Lead Designation	Lead Color	Connecting Block Terminal
RREF1	W-BL	1		V-O	43
TREF1	BL-W	2		O-V	44
			To: Y Cable Clock End (Secondary)		
RREF2	W-O	3		V-O	43
TREF2	O-W	4		O-V	44

Cross-Connects for Standard Reliability					
From: Stratum 3 Clock			To: Y Cable Clock End (Primary)		
Lead Designation	Lead Color	Connecting Block Terminal	Lead Designation	Lead Color	Connecting Block Terminal
			To: Tone-Clock Carrier A		
BCLKRTN	R-O	13	ALRM5B	V-G	45
BCLKLST	O-R	14	ALRM5A	G-V	46
BPWRRTN	R-BR	17	ALRM4B	BK-BL	21
BPWRLST	BR-R	18	ALRM4A	BL-BK	22
REF2RTN	W-BR	7	ALRM3B	R-BR	17
REF2LST	BR-W	8	ALRM3A	BR-R	18
SCLKRTN	R-BL	11	ALRM2B	R-BL	11
SCLKLST	BL-R	12	ALRM2A	BL-R	12
SPWRRTN	R-G	15	ALRM1B	Y-BL	31
SPWRLST	G-R	16	ALRM1A	BL-Y	32
REF1RTN	W-G	5	ALRM0B	W-BR	7
REF1LST	G-W	6	ALRM0A	BR-W	8
CCA01R	R-S	19	EXTSYN0T	V-BL	41
CCA01T	S-R	20	EXTSYN0R	BL-V	42
CCB01R	BK-BL	21	EXTSYN1T	Y-G	35
CCB01T	BL-BK	22	EXTSYN1R	G-Y	36

Cross-Connects for High or Critical Reliability								
From: Stratum 3 Clock			To: Y Cable Clock End (Primary)					
Lead Designation	Lead Color	Connecting Block Terminal	Lead Designation	Lead Color	Connecting Block Terminal			
RREF1	W-BL	1		V-O	43			
TREF1	BL-W	2		O-V	44			
			To: Y Cable Clock End (Secondary)					
	W-O	3		V-O	43	Lead Designation	Lead Color	Connecting Block Terminal
	O-W	4		O-V	44			
						To: Tone-Clock Carrier B		
			ALRM5B			ALRM5B	V-G	45
			ALRM5A			ALRM5A	G-V	46
BPWRRTN	R-BR	17	ALRM4B	BK-BL	21	ALRM4B	BK-BL	21
BPWRLST	BR-R	18	ALRM4A	BL-BK	22	ALRM4A	BL-BK	22
REF2RTN	W-BR	7	ALRM3B	R-BR	17	ALRM3B	R-BR	17

Cross-Connects for High or Critical Reliability								
From: Stratum 3 Clock			To: Y Cable Clock End (Primary)					
Lead Designation	Lead Color	Connecting Block Terminal	Lead Designation	Lead Color	Connecting Block Terminal			
REF2LST	BR-W	8	ALRM3A	BR-R	18	ALRM3A	BR-R	18
SCLKRTN	R-BL	11	ALRM2B	R-BL	11	ALRM2B	R-BL	11
SCLKLST	BL-R	12	ALRM2A	BL-R	12	ALRM2A	BL-R	12
SPWRRTN	R-G	15	ALRM1B	Y-BL	31	ALRM1B	Y-BL	31
SPWRLST	G-R	16	ALRM1A	BL-Y	32	ALRM1A	BL-Y	32
REF1RTN	W-G	5	ALRM0B	W-BR	7	ALRM0B	W-BR	7
REF1LST	G-W	6	ALRM0A	BR-W	8	ALRM0A	BR-W	8
CCA01R	R-S	19	EXTSYN0T	V-BL	41			
CCA01T	S-R	20	EXTSYN0R	BL-V	42			
CCB01R	BK-BL	21	EXTSYN1T	Y-G	35			
CCB01T	BL-BK	22	EXTSYN1R	G-Y	36			
CCA02R	BK-O	23				EXTSYN0T	V-BL	41
CCA02T	O-BK	24				EXTSYN0R	BL-V	42
CCB02R	BK-G	25				EXTSYN1T	Y-G	35
CCB02T	G-BK	26				EXTSYN1R	G-Y	36

Return to Task List

Install and Connect Modems

This section provides the information necessary to install and connect modems.

Note:
The Avaya Media Gateway (si) does not require an external modem because an internal modem is in the processor circuit pack.

Task List: Install and Connect Modems

- Connect Modem to Telephone Network
- Set External Modem Options
- Add U.S. Robotics Model USR 33.6 EXT External Modem to EPN
- Add U.S. Robotics Model USR 33.6 EXT External Modem to PPN
- Add External Modem to TN1648B
- Add Modem Pooling

Connect Modem to Telephone Network

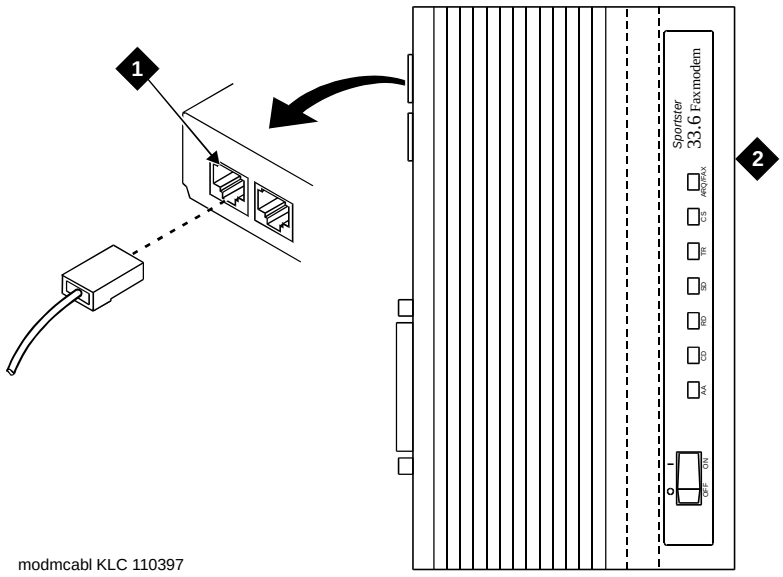
Begin

Return to Task List

Cross-connect the network jack on the modem to the network interface (via a 103A or modular wall jack). See Pinout of Network Jack and Network Jack on U.S. Robotics Modem.

Pinout of Network Jack	
Pin Number	**Signal**
1	Unused
2	Tip
3	Ring
4	Unused

Network Jack on U.S. Robotics Modem



modmcabl KLC 110397

Figure Notes:

[1] Pin 1 of network jack

[2] Modem

Return to Task List

Set External Modem Options

Begin

Return to Task List

A locally obtained, type-approved external modem may be used. Contact your Avaya representative for information.

1. Set the modem switches:

- If a U.S. Robotics Model 839 modem is installed, refer to U.S. Robotics Model 839 External Modem Switch Settings to set the 8 option switches on the U.S. Robotics modem.
- If any other modem is installed, refer to the setup instructions provided with that modem. Refer to SCC1 Modem Fields while setting up the modem.

2. At the management terminal, enter **change system-parameters maintenance** and press **Enter**.
3. Scroll to page 3 of the form. Set the **Modem Connection:** field to **external** if a modem is installed. Set the field to **none** if no modem is installed.

Note:
This field must be administered or alarms will be generated. The **Modem Connection:** field cannot be set to **none** if Alarm Origination is activated.

1. Set the **Data Bits:** field to **8** (default).
2. Set the **Parity:** field to **none** (default).
3. For non-United States installations, set the remaining modem fields as shown in SCC1 Modem Fields.
4. Press **Enter** when the modem fields are properly administered.

U.S. Robotics Model 839 External Modem Switch Settings		
Switch	**Setting**	**Function**
1	OFF (Up)	DTR (Data Terminal Ready) override
2	OFF (Up)	Verbal result codes (text-formatted feedback characters such as *connected* or *no carrier*)
3	ON (Down)	Enable result codes
4	OFF (Up)	Displays keyboard commands (local echo)
5	OFF (Up)	Sets auto answer. Verify that the **Auto Answer Ring Count (rings):** on the maintenance-related system parameters form is S0=10.
6	OFF (Up)	CD (Carrier Detect) override (modem sends CD signal on connect, drops CD on disconnect)
7	OFF (Up)	Power-on and ATZ reset software defaults (loads Y or Y1 configuration from NVRAM)
8	ON (Down)	AT (Attention) command set recognition (enables recognition, smart mode)

SCC1 Modem Fields	
Field	**Description**
Modem Connection	Default is **none**. Set to **external** if a modem is used.
Modem Name	This field is 20 characters long and permits alphanumeric characters to provide a unique qualifier for a given modem.
RTS/CTS Enabled	Informs modem that communication with the data source UART is driven with RTS/CTS flow control. The default 6-character field name is **&H1**. Set the field name to \Q3 for Intel modems. This field is not case-sensitive.
Asynchronous Data Mode	Configures modem as an asynchronous device. This 8-character field name has a default value of **&M0** (default) for R10 SCC. Set the field to &M0&Q0 for Intel modems. This field is not case-sensitive.
DTE Auto-Data Speed	Adjusts the speed of the data source (DTE) UART to the outgoing (modem-to-modem) data rate. At maximum, this speed is 9600 baud. It is not desirable to have the serial data fill the modem buffer faster than the outgoing data rate, since data compression is disabled. The field name has a 6-character blank default value. The Paradyne products use S90=1 to enable this functionality while the Intel product uses \J1 to enable similar functionality. This field is not case-sensitive.
Disable Data Compression	Turns off the default data compression algorithms used by most modems. The field has a blank field of 6 characters as default. The AT commands that control this are supported by similar commands; however, these commands do not operate in the same manner. The Intel modems require H0%C0 to disable V.42bis & MNP Class 5 data compression algorithms. The Paradyne products only use%C0 to disable both algorithms. This field is not case-sensitive.
Enable Error Control	Turns on the V.42 LAPM and MNP error control protocols. The field has a blank default of 6 characters. The Paradyne products use the command \N5 to enable V.42/MNP/Buffer error control while the Intel product uses \N3 to provide similar functionality.

SCC1 Modem Fields	
Field	**Description**
Misc. Init. Param	This field has a 20-character blank default and supports any initialization parameters not already specified. The AT commands specified in this field are always the last initialization parameters to be sent to the external modem. This field is not case-sensitive.
Auto-Answer Ring Number	This field controls the number of rings required before the modem answers an incoming call. This field should be set to S0=10.
Dial Type	This field controls the type of interregister signaling used between the modem and the CO. This 3-character field is denoted by “T” for tone dialing (default) and “P” for pulse dialing. This setting depends on type of line (tone or pulse) to the modem.
Adjustable Make/Break Ratio	This field controls the make/break ratios of pulses and DTMF dialing. Most modems have support for different make/ break options for pulse dialing only. Paradyne, Intel, and U.S. Robotics use the default **&P0** to select a ratio of 39% make and 61% break for communication for the United States and Canada. The option &P1 sets a ratio of 33% make and 67% break for the United Kingdom and Hong Kong. This is a 5-character blank field (default) and is not case-sensitive.
Dial Command	This field has a default of “D” in a 3-character field. This field denotes the standard dialing command of the modem and is not case-sensitive.
No Answer Time-Out	Most modems provide a timer that abandons any outbound data call after a predetermined interval. This is a non-administrable parameter.

Return to Task List

Add U.S. Robotics Model USR 33.6 EXT External Modem to EPN

Begin

Return to Task List

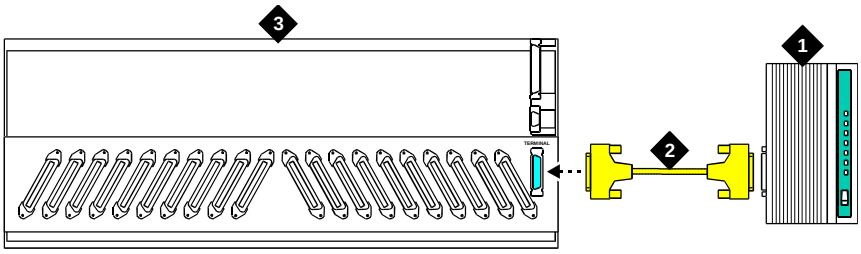
1. Connect an RS-232 cable to the modem. See Connect External Modem to EPN.

Note:
In the following steps, a PC with Windows 95 or Windows NT 4.0 may be substituted for the dumb terminal. Use the Hyperterminal (terminal emulation) application.

2. Connect the opposite end of the RS-232 cable to a dumb terminal.
3. Set the dumb terminal to full duplex mode.
4. Type **AT&N6** to set the baud rate to 9600.

   The modem connects at 9600 baud but throughput is at 1200 baud.
5. Type **AT&W0** to save the setting into non-volatile RAM.
6. Set Switch 5 to the OFF (up) position to disable auto answer.
7. Disconnect the RS-232 cable from the terminal and connect it to the TERMINAL connector on the rear of the system cabinet.

Connect External Modem to EPN



cydfepnm KLC 100397

Figure Notes:

[1] U.S. Robotics External Modem

[2] RS-232 Cable

[3] Expansion Port Network

Return to Task List

Add U.S. Robotics Model USR 33.6 EXT External Modem to PPN

Begin

Return to Task List

1 Connect an RS-232 cable to the modem. See Connect External Modem to PPN.

Note:
In the following steps, a PC with Windows 95 or Windows NT 4.0 may be substituted for the dumb terminal. Use the Hyperterminal (terminal emulation) application.

2 Connect the opposite end of the RS-232 cable to a dumb terminal.

3 Set the dumb terminal to full duplex mode.

4 Type **AT&N6** to set the baud rate to 9600.

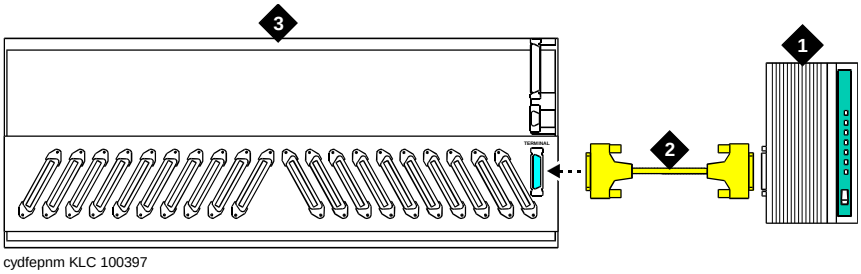
The modem connects at 9600 baud but throughput is at 1200 baud.

5 Type **AT&W0** to save the setting into non-volatile RAM.

6 Set Switch 5 to the OFF (up) position to disable auto answer.

7 Disconnect the RS-232 cable from the terminal and connect it to the TERMINAL connector on the rear of the system cabinet.

Connect External Modem to PPN



cydfepnm KLC 100397

Figure Notes:

[1] U.S. Robotics External Modem

[2] RS-232 Cable

[3] Processor Port Network

Return to Task List

Add External Modem to TN1648B

Begin

Return to Task List

Use a type-approved external modem.

1. Unpack and inspect the equipment received. See External Modem Pass-Thru Kit Equipment for the parts and Parts List for a list of parts. Actual equipment may vary in appearance and may ship in separate packages.
2. Open the front door.

Note:
Administration may be required before removing the circuit pack in the following step.

3. Determine which slot will contain the new circuit pack. Remove the circuit pack or the apparatus blank from this slot.
4. Install the new circuit pack.
5. From the front, remove the fan cover. See Remove the Fan Cover.
6. Open the rear door.
7. Attach the panel adapter bracket. See Attach the Panel Adapter Bracket.
8. Insert the cable assembly. See Attach the Cable Assembly to the Bracket.
9. Connect the external modem cable to the cable assembly.
10. Attach the RJ45 (telephone plug) to the pass-thru tool using a tie wrap. See Attach the Cable to the Pass-Thru Tool. If you are using only one RJ45, bundle the other one and tie wrap it near the body of the cable assembly.
11. Slide the tool to the front of the cabinet. See Insert the Pass-thru Tool.
12. Pull the tool (with adapter and cable attached) out through the front of the cabinet.
13. Close the rear door.
14. Replace the fan cover. See Replace the Fan Cover.
15. Connect the cable to the front of the TN1648B circuit pack. See Connect the Cable to the TN1648B Circuit Pack.
16. Dress the cable straight down the front of the circuit pack. Do not allow the cable to cross in front of another circuit pack.
17. Attach the cable mount to the cabinet and secure the cable. See Connect the Cable to the TN1648B Circuit Pack.
18. Close the front door.
19. Discard the pass-thru tool.
20. Log in as **craft**.

Note:

If you have a **dadmin** login and password, you can use them instead of craft and the craft password.

21 Administer the system by referring to the *Installation for Adjuncts and Peripherals for Avaya MultiVantage Solutions*.

22 Type **list configuration all** and press **Enter** to determine if the new circuit pack appears in the correct slot and that there are no circuit pack conflicts.

External Modem Pass-Thru Kit Equipment

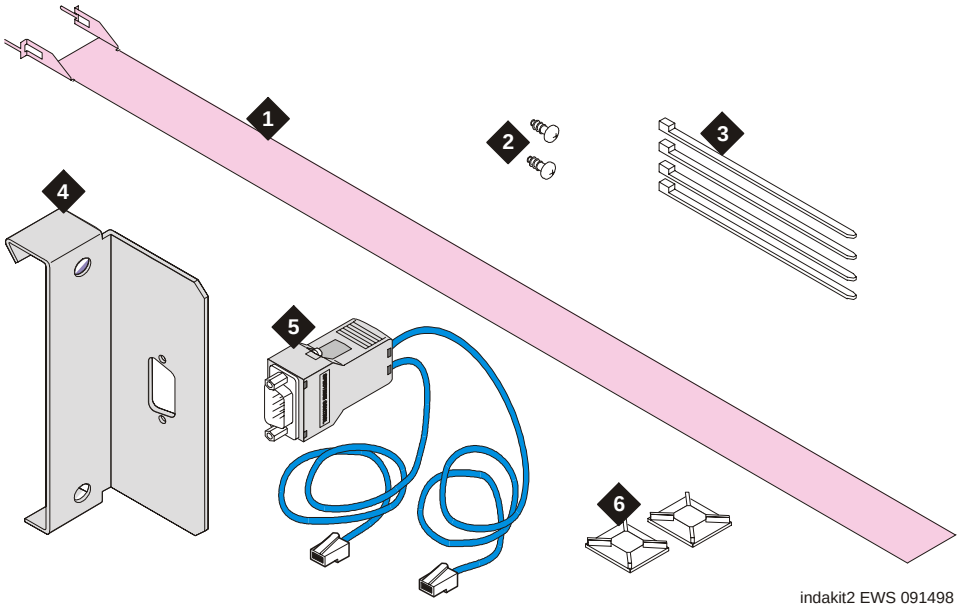


Figure Notes:

[1] Pass-thru Tool

[2] Machine Screw

[3] Cable Tie

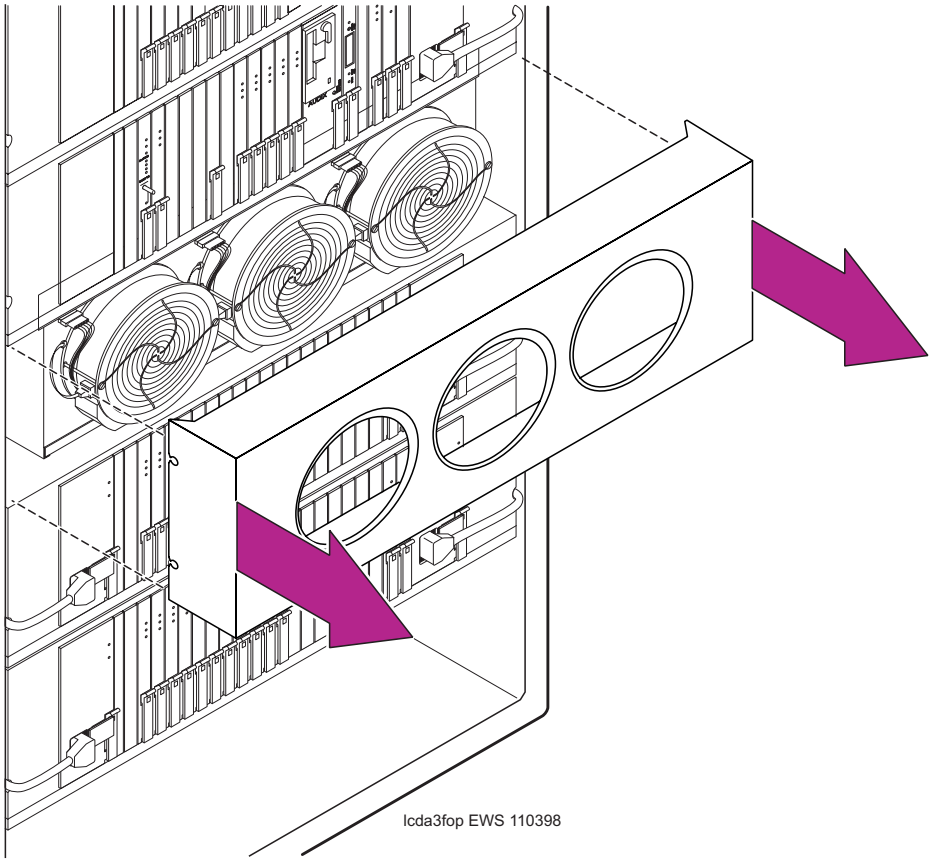
[4] Panel Adapter Bracket

[5] Cable Assembly

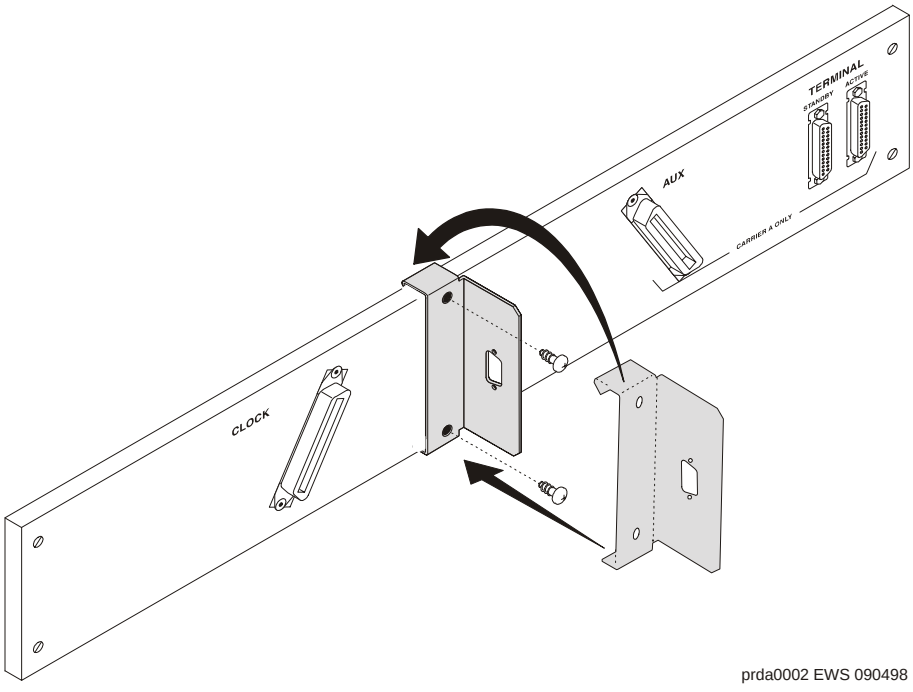
[6] Cable Tie Mount

Parts List	
Quantity	**Description**
1	External modem pass-thru kit Kit includes: pass-thru tool, cable ties, panel adapter bracket, machine screws, and cable tie mounts.
1	Cable Assembly

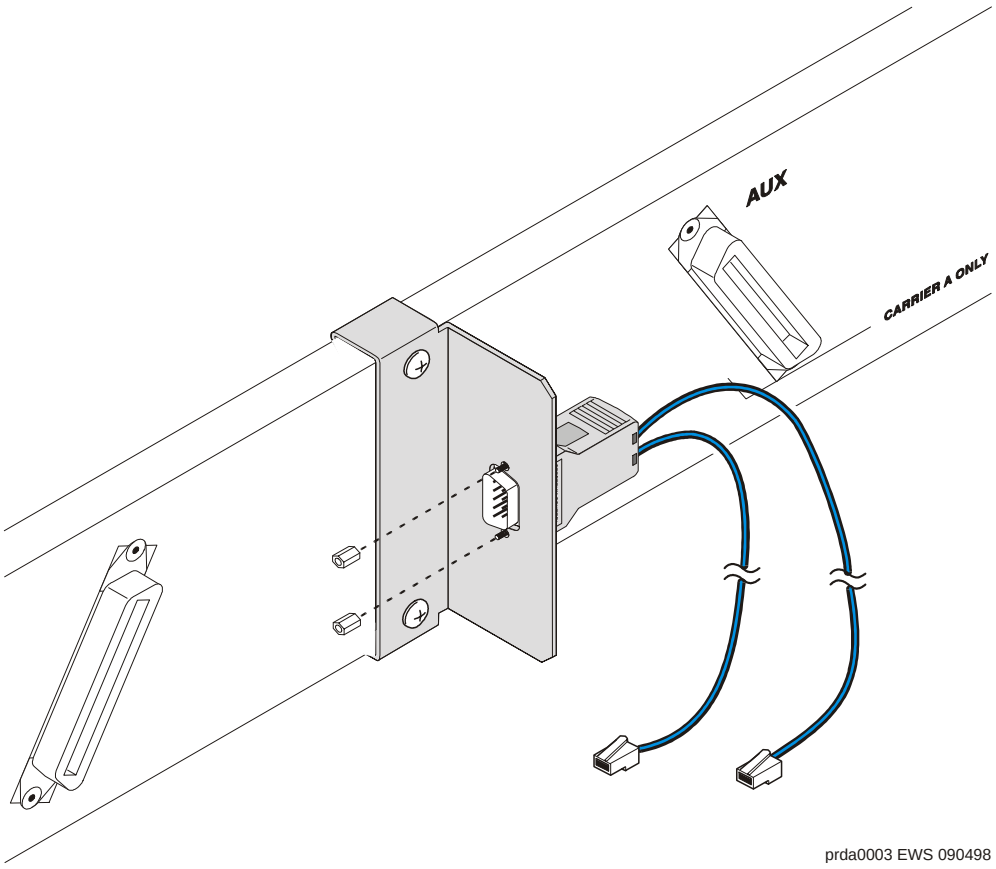
Remove the Fan Cover



Attach the Panel Adapter Bracket



Attach the Cable Assembly to the Bracket



Attach the Cable to the Pass-Thru Tool

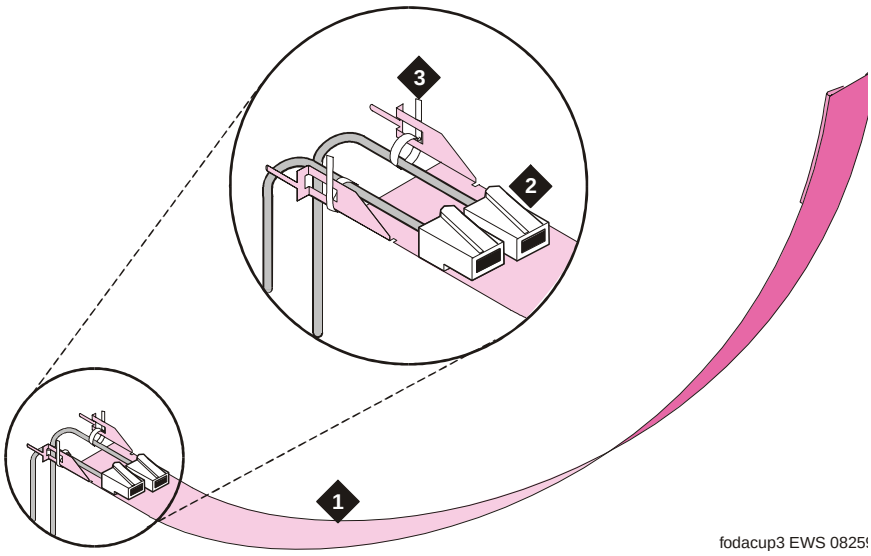


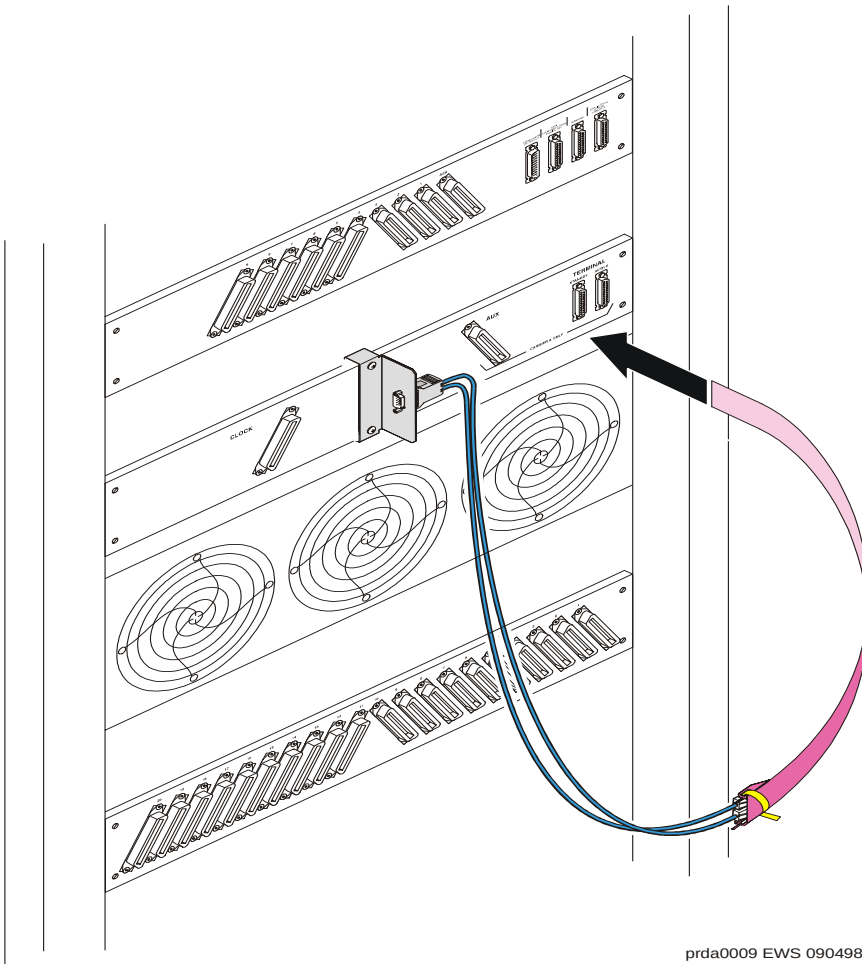
Figure Notes:

[1] Pass-thru Tool

[2] RJ45 (Telephone Plug)

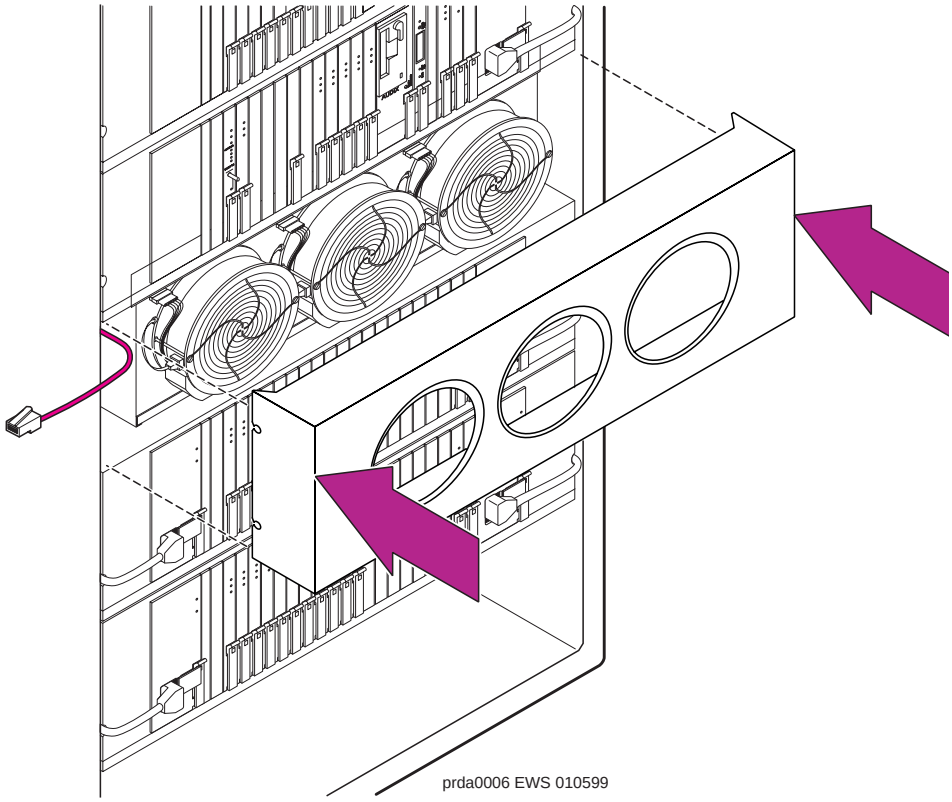
[3] Tie Wrap

Insert the Pass-thru Tool

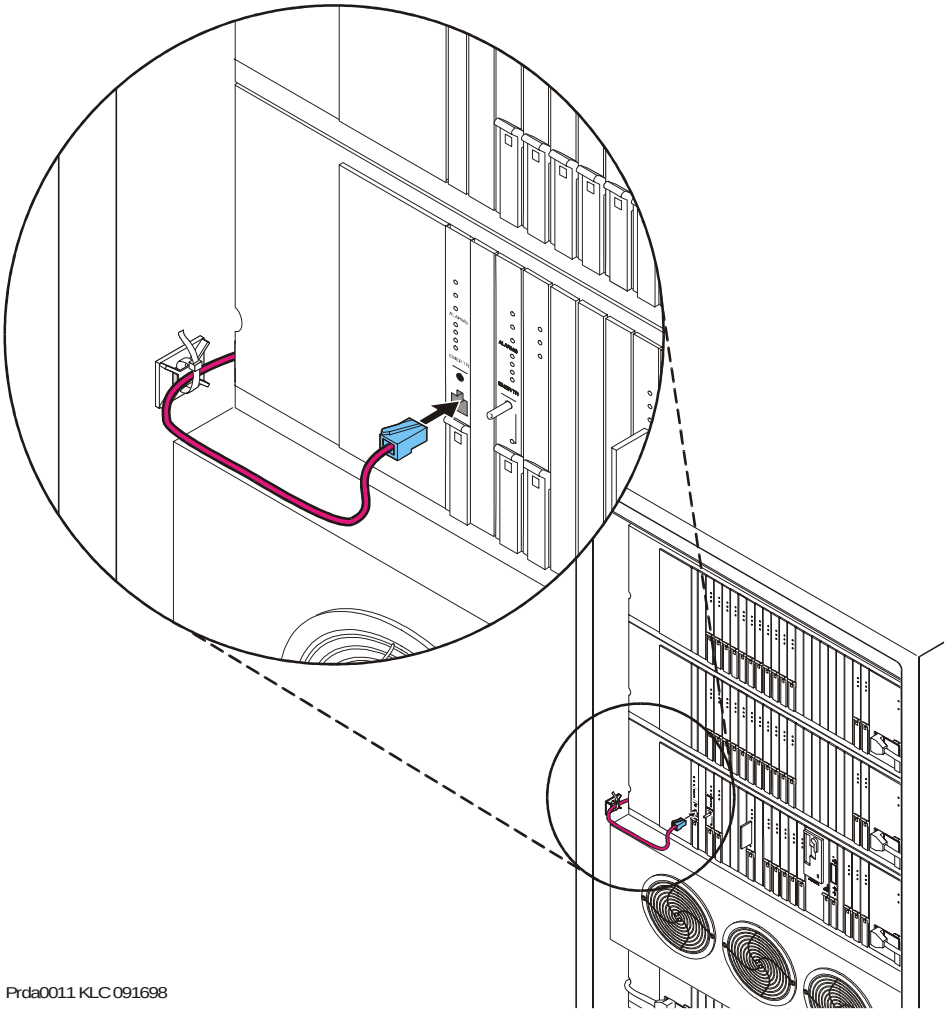


prda0009 EWS 090498

Replace the Fan Cover



Connect the Cable to the TN1648B Circuit Pack



Return to Task List

Add Modem Pooling

Return to Task List

Modem Pooling supports 2 types of conversion resources: integrated and combined.

The integrated type requires a TN758 Pooled Modem circuit pack for each 2 conversion resources provided.

The combined type requires a port on a TN754B Digital Line circuit pack and a port on either an 8-port TN742, TN769; a 16-port TN746B; or a 24-port TN793/B, TN2793/B Analog Line circuit pack for each conversion resource provided.

The pooled modem requires a WP90110 L7 power supply. Although an integrated conversion resource can use either the L5 or L7, the combined only works with an L7.

CAUTION:
The L5 and L7 power supplies look identical. Check the list number on the power supply before installing.

Task List: Set up Modem Pooling

1. Add Pooled Modem (Paradyne 3800 Series)
2. Set the Modem Connected to Data Module
3. Set the Modem Connected to the Data Terminal Equipment (DTE)
4. Set 7400A and 7400B Options (Modem Pooling)

Return to Task List

Add Pooled Modem (Paradyne 3800 Series)

Begin

Return to Task List

Use this procedure for Paradyne 3800 Series modems. For other types of modems, refer to the vendor's documentation.

The pooled modem requires a WP90110 L7 power supply. The L5 and L7 power supplies look identical. Check the list number on the power supply before installing.

1. Determine the port assignment of the circuit packs to be added (if required).
2. Install the appropriate circuit packs in assigned carrier slot (if required).
3. Type **AT&F&D2&S4\D3S2=128x7V2S7=60S85=1** and press **Enter**.
4. Type **ATY0S10=100S78=2M0E0\N1&W** and press **Enter**.

Return to Task List

Set the Modem Connected to Data Module

Begin

Return to Task List

1. Type **add data-module next** and press **Enter**.
2. Type **pdm** in the **Type** field.
3. Type **x** in the **Port** field.
4. Type **dte** in the **Connected to** field and press **Enter**.
5. Type **add station next** and press **Enter**.
6. Type **2500** in the **Type** field.
7. Type **x** in the **Port** field.
8. Type **n** in the **Tests** field and press **Enter**.
9. Type **add modem-pool next** and press **Enter**.
10. Type **combined** in the **Group Type** field.
11. Type **5** in the **Hold Time (min)** field.
12. Type **two-way** in the **Direction** field.
13. Type **9600** in the **Speed** field.
14. Type **Full** in the **Duplex** field.
15. Type **async** in the **Synchronization** field.

16 Type the port pair assignments in the **Analog** and **Digital** fields and press **Enter**.

Return to Task List

Set the Modem Connected to the Data Terminal Equipment (DTE)

Begin

Return to Task List

1 Type **add station next** and press **Enter**.

2 Type **2500** in the **Type** field.

3 Type the port assignment in the **Port** field and press **Enter**.

Set 7400A and 7400B Options (Modem Pooling)

Begin

Return to Task List

Determine if the 7400A or 7400B will be interfacing with D-lead modems or attention control modems. Use Options for D-Lead and Attention Control Modems to interface with either modem. You can set options for the 7400B through a dumb terminal.

Options for D-Lead and Attention Control Modems

Set Option Display	Option	D-Lead Settings	Attention Control Settings
Set 300 Speed?	300	Note 1	Note 1
Set 1200 Speed?	1200	Note 1	Note 1
Set 2400 Speed?	2400	Note 1	Note 1
Set 4800 Speed?	4800	Note 1	Note 1
Set 9600 Speed?	9600	Note 1	Note 1
Set 19200 Speed?	19200	Note 1	Note 1
Set AT Control?	AT	OFF	ON
Set CI Lead?	CI	Note 2	Note 2
Set CI2 Lead?	CI2	Note 2	Note 2
Set CH Lead?	CH	Note 2	Note 2
Set CH2 Lead?	CH2	Note 2	Note 2
Set LL Lead?	LL	Note 2	Note 2
Set REMOTE Loop?	REMLOOP	Grant	Grant
Set RL Lead?	RL	Note 2	Note 2
Set SIGLS Disc?	SIGLS DISC	ON	ON
Set TM Lead?	TM	Note 2	Note 2

Note 1. Set speed to match remote modem. At least one speed must be set ON.

Note 2. Set to match remote modem.

Return to Task List

Upgrade Firmware on Programmable Circuit Packs

You can download new firmware to specific, programmable circuit packs. Programmable circuit packs have a “P” in their suffix. For example TN799DP is programmable, but TN799C is not. This programmable capability reduces the need to physically remove circuit packs and return them to Avaya for firmware updates.

You can download firmware to one or more programmable circuit packs of the same type residing within the same configuration.

During this firmware download process, a firmware image is installed on a circuit pack in three steps:

1. The image is copied from an Avaya server over the Web to a local “staging area” — a PC or server on the customer LAN.
2. The image is copied from the local staging area to the *source* circuit pack.
3. The image is downloaded from the *source* to the *target* with one of these methods:
   - For a *self download*, the image is downloaded directly from RAM (the *source*) to flash memory (the *target*) on the same circuit pack.
   - For a *C-LAN-distributed download*, the image is downloaded from RAM (the *source*) on a C-LAN circuit pack to flash memory (the *target*) on one or more separate circuit packs of the same type.

Although different circuit packs have different potential roles in a firmware download, currently the following circuit packs can participate in a firmware-download procedure. Additional circuit packs will be added in the future.

- TN799C or TN799DP—Control LAN (C-LAN)
- TN2214CP orTN2224CP—2-Wire Digital Line DIG-LINE)
- TN2302AP—IP Media Processor (IPMEDPRO)
- TN771DP—Maintenance/Test (M/T-ANL)
- TN464GP, TN2464BP, and TN2313AP—UDS1
- TN2501AP—Voice Announcements over LAN (VAL)

See “Programmable Circuit-Pack Roles in Firmware Downloads” on page 342 for each circuit pack’s roles in a firmware download.

Self and C-LAN-distributed download procedure

Programmable Circuit-Pack Roles in Firmware Downloads

Circuit Pack	TN Code	Role in Self Download	Role in C-LAN-distributed Download
C-LAN	TN799C[1]		Source
	TN799DP[2]	Source and Target	Source
VAL	TN2501AP	Source and Target	
IP Media Processor	TN2302AP[3]		Target
DIG-LINE (2-wire)	TN2214CP		Target
	TN2224CP		Target
Maintenance/Test	TN771DP		Target
UDS1	TN464GP		Target
	TN2464BP		Target
	TN2313AP		Target

1. The TN799C C-LAN circuit pack can be the source for a C-LAN-distributed download but cannot be the target circuit pack for either a self or C-LAN-distributed download because it is not a programmable circuit pack (no P suffix).
2. The TN799DP can be both source and target for a self download and can be the source for a C-LAN-distributed download.
3. For TN2302AP circuit packs with a vintage less than 22, a different download procedure is required that is not described here. Go to the Avaya Support Web site under **Software & Firmware Downloads**, DEFINITY ECS, TN2302AP firmware downloads. On the page titled “Retired - (OLD Do Not Use) DEFINITY Firmware Downloads”, scroll down to the TN2302AP section and click on TFTP_Firmware_download_procedure.pdf.

This section describes the procedures for either a self or C-LAN-distributed firmware download. These procedures help you determine which method to use. The main differences between the two methods are:

C-LAN-distributed download	The source circuit pack is always a C-LAN, either TN799DP or TN799C. Multiple target circuit packs of the same TN code can be scheduled for download at a time.
Self download	The source and target circuit packs are the same. Each circuit pack must be scheduled for download individually.

The high-level steps used to perform a self- or C-LAN-distributed firmware download are

1. “Prepare for download” on page 343
2. “Upload image file from the Web to staging area” on page 345
3. “FTP the image file to source” on page 345
4. “Schedule a download to target(s)” on page 346
5. “Monitor download progress” on page 350

6 “Disable file system” on page 352

Note:
If you have any trouble with this procedure, refer to “Troubleshooting firmware downloads” on page 352.

Prepare for download

The following subsections contain procedures to prepare for the firmware downloads to target circuit packs:

- “Verify hardware/software requirements” on page 343
- “Get circuit pack information” on page 344
- “Set up source circuit pack’s file system” on page 345

Verify hardware/software requirements

Make sure you know which download procedure to use and that you have all the hardware and software that is necessary to proceed.

- Given the type of target circuit pack to be upgraded, choose an appropriate source circuit pack from the following table (“Download Method by Circuit Pack” on page 343). The last column indicates which download method must be used with the target and chosen source.

Download Method by Circuit Pack

Target Circuit Pack(s)	Source Circuit Pack	Download Method
TN464GP, TN2464BP, and TN2313AP (UDS1)	TN799C or TN799DP	C-LAN-distributed
TN2214CP or TN2224CP (DIG-LINE)	TN799C or TN799DP	C-LAN-distributed
TN771DP (Maintenance/Test)	TN799C or TN799DP	C-LAN-distributed
TN2302AP (IP Media Processor)[1]	TN799C or TN799DP	C-LAN-distributed
TN799DP (C-LAN)	TN799DP	Self
TN2501AP (VAL)	TN2501AP	Self

1.For TN2302AP circuit packs with a vintage less than 22, a different download procedure is required that is not described here. Go to the Avaya Support Web site under **Software & Firmware Downloads**, DEFINITY ECS, TN2302AP firmware downloads. On the page titled “Retired - (OLD Do Not Use) DEFINITY Firmware Downloads”, scroll down to the TN2302AP section and click on TFTP_Firmware_download_procedure.pdf.

- Make sure you have the following:
  - ~ Superuser or services login and password to the Avaya Communication Manager
  - ~ PC or other server with the following:
    - IP connectivity to the source board
    - Web browser (Internet Explorer 5.0 or higher or Netscape 4.x)
    - IP connectivity to the World Wide Web
    - File transfer protocol (FTP) software program

Note:
Some GUI-based FTP applications are incompatible with Avaya Communication Manager. Command-line FTP applications launched from a DOS prompt or UNIX shell work best.

If you need to distribute firmware from a source C-LAN to target boards on a DS1-C (DS1 converter complex) remote port network, then make sure a clear channel exists between the source C-LAN and those target boards:

1. Type **list fiber-link** and press **Enter**.
2. Find the link between the source C-LAN and the target boards.
3. Type **display fiber-link *n***, where ***n*** is the fiber link's number, and press **Enter** to access the Fiber Link Administration screen.
4. Go to the page 2 and verify that the `Line Coding` fields are set to **b8zs** for T1 facilities and **hdb3** for E1 facilities.

   If they are not, then escalate before proceeding with the firmware download.

Get circuit pack information

1. Type **list configuration all** and press **Enter** to access the System Configuration screen.

```
list configuration all

               SYSTEM CONFIGURATION

Board                            Assigned Ports
Number Board Type       Code   Vintage  u=unassigned t=tti p=psa

01A08 IP MEDIA PROCESSOR   TN2302AP HW03 FW044 01 02 03 04 05 06 07 08

01A04 CONTROL-LAN       TN799DP  HW00 FW005 u u u u u u u u
                          u u u u u u u u
                                                 17

01B04  DS1 Interface           TN464GP  HW02 FW006 01 02 03 04 05 06 07 08
                          09 10 11 12 13 14 15 16
                          17 18 19 20 21 22 26 24
                          u u u u u u u u
01B05  DS1 Interface           TN464GP  HW02 FW006 01 02 03 04 05 06 07 08
                                                 09 10 11 12 13 14 15 16
                          u u u u u u u u
                          u u u u u u u u
01B06  DS1 Interface           TN464F   000038     01 02 03 04 05 u u u
                          u u u u u u u u
                          u u u u u u u u
                          u u u u u u u u

01A10 VAL-ANNOUNCEMENT         TN2501AP HW01 FW004 01 02 03 04 05 06 07 08
                                                 09 10 11 12 13 14 15 16
                                                 17 18 19 20 21 22 26 24
                          25 26 27 28 29 30 31 32
                                                 33
```

2. Look for the target circuit pack(s). If the suffix in the `Code` field does not have a "P" (e.g., TN2302A**P**), a firmware download is not possible.
3. Look for the firmware vintage(s) in the `Vintage` field of the target circuit pack(s) to see if a firmware download is needed.
4. Record the UUCSS address in the `Board Number` field of each source and target circuit pack.

   If a C-LAN is the source, make sure port 17 is assigned on that C-LAN. If it is not assigned, administer the port.

5 Type **add data-module *UUC*17** and press **Enter**.

For a self download to a VAL board, make sure that port 33 is assigned on the VAL board. If it is not assigned, administer the port.

6 Type **add data-module *UUC*33** and press **Enter**.

7 Determine the IP address of the source circuit pack. You can either ask the data systems administrator or type the following commands:

a Type **display ip-interfaces**. Find the source circuit pack's `Slot` location and write down its `Node Name`.
b Type **display node-names ip**. Find the source circuit pack's `Node Name` and write down its `IP Address`.

Set up source circuit pack's file system

Before files can be copied to the source circuit pack, you must set up a file system on the source circuit pack to accept the files.

1 Log in using a superuser or services login and password.

2 Type **enable filesystem board *UUCSS* login *ftplogin ftppassword***, where:

~ *UUCSS* is the location of the source circuit pack.
~ *ftplogin* is any temporary login ID that you choose for this FTP session (for example, *denver*).
~ *ftppassword* is any password that you choose for this FTP session (for example, *broncos*). The password must be at least 7 characters long.

You use this same *ftplogin* and *ftppassword* in the section, "FTP the image file to source" on page 345.

This completes the preparation for a firmware download.

Upload image file from the Web to staging area

To upload files from the Web, you need a temporary staging area to store the firmware images before downloading them to a circuit pack. Although the staging area is often on a PC platform, you can also use other platforms such as a UNIX or Linux.

1 Go to the Avaya Support Web site (http://avaya.com/support). Follow the **Software & Firmware Downloads** link and the subsequent links for your product and the target circuit pack TN code.

2 Find the section for the firmware vintage you want. Unless otherwise instructed, choose the highest vintage.

3 Be sure to read that vintage's ReadMe file before downloading the image file(s).

4 For each image file to be downloaded:

a Click on the image filename.
b Save this file to disk in a local staging area directory.
c Write down the path to the local staging area and the filename of the firmware image. You need this information later.

FTP the image file to source

The following steps are generic to most FTP programs.

1 From the computer where the local staging area is, bring up a DOS interface or UNIX/Linux shell.

2 Ensure that the new firmware image file is in the local staging area directory:

a Change the directory to the staging area:

cd /*your-staging-area*

b List the contents of the directory showing the most recent files last using **dir /od** (DOS) or **ls -ltr** (UNIX/Linux).

3 Use FTP to copy the firmware image file(s) to the source:

a Type **ping *ip_address***, where *ip_address* is the IP address of the source board, and press **Enter** to verify a communication link to the source board.

b Type **ftp *ip_address*** and press **Enter** to provide the FTP interface with a link to the source.

c Log into the FTP session with the same *ftplogin* and *ftppassword* that you set up earlier in “Set up source circuit pack’s file system” on page 345.

d Type **binary** and press **Enter**. This requests that files be transferred in binary format.

CAUTION:

Files are corrupted during transfer if you do not specify **binary**.

a If you are self downloading to a TN2501AP (VAL) circuit pack, type **cd /**

This command moves you from the announcement directory (default for an FTP session on the VAL board) to the root directory (“/”), where firmware and other files reside. This keeps the firmware image file separate from the announcement files.

b Type **put *filename.ext*** and press **Enter** to copy the new firmware image file to the source directory in RAM.

c Type **ls** and press **Enter** to verify that the new firmware image file is on the circuit pack.

d Type **bye** and press **Enter** to end the FTP session.

Schedule a download to target(s)

You can schedule the download to occur immediately or at a later date and time. The procedures for self- and C-LAN-distributed download methods differ at this step.

1 Type **change firmware download** and press **Enter**.

2 Fill in the fields as described in “Firmware Download fields and descriptions” on page 347.

Firmware Download fields and descriptions

Field	Description	Notes
Source Board’s Location	Type the UUCSS address of the source circuit pack.	For a self download, the same board is the source board and target board. For a C-LAN-distributed download, this is the source C-LAN location.
`Firmware Image File Name`	Type the complete filename of the new firmware image file. If the **list directory board** command showed that the file had an extension, such as.bin, include the extension as well.	
`Target Board Code`	Type the circuit pack ID, for example “TN2501.” Do not type the suffix, such as “AP”, “DP”, or “GP”.	Enter the TN code of the target circuit pack(s). For a self download, this is the same as for the source circuit pack.
Suffix	Examples: • For VAL (TN2501AP), type **AP**. • For C-LAN (TN799DP), type **DP**. • For DS1 (TN464GP), type **GP**.	
`Firmware Vintage`	This is blank. It shows a value in the Firmware Download form of a **display firmware download** or a **status firmware download**.	

Continued on next page

Firmware Download fields and descriptions <BlueItalic9>Continued<BlueDingbat9>Ø

Field	Description	Notes
`Schedule Download`	Type **y** to schedule the firmware download for another time. Type **n** to start the firmware download immediately after completing the form.	Once the firmware download begins, you cannot make any changes to this form. You can only disable this schedule using **disable firmware download** and then start a new one. (See "Aborting a firmware download" on page 352 for instructions.) If you answer **n**(o), then the `Start Date/Time` and `Stop Date/Time` fields disappear. The download begins as soon as you press Enter.
`Remove Image File After Successful Download`	Type **y** if you want the procedure to automatically remove the new firmware image file [default].	At the completion of a successful download, the procedure automatically removes the new firmware image file from the source file system, freeing up the memory on the source circuit pack. We recommend using the default setting.
	Type **n** if you do not want the new firmware image file removed.	If field is set to **n**, you must manually remove the new firmware image file from the source file system after the download has completed. (See "Disable file system" on page 352 for instructions.)

Continued on next page

Firmware Download fields and descriptions <BlueItalic9>Continued<BlueDingbat9>Ø

Field	Description	Notes
Start Date/Time	Type the date and time that you want the firmware download to begin.	
Stop Date/Time	Type the date and time that you want the firmware download to end.	If the scheduled stop time is reached before the new firmware image file has been downloaded to every circuit pack, the system finishes downloading to the circuit pack in progress before aborting the remainder of the download schedule.
Target Location	Type the UUCSS address of the circuit pack that you are updating.	For a self download, this circuit pack must reside in the same location as the source pack. For a C-LAN-distributed download, enter up to 50 locations — these must all be the same type of circuit pack.

If you are performing a self download, enter only one target board location; it is the same as the source board location. The following screen provides an example of self download to a VAL circuit pack.

```
change firmware download                    Page  1 of  1
                    FIRMWARE DOWNLOAD
 Source Board Location: 01A10
irmware Image File Name: tn2501ap_f05.bin
   Target Board Code: TN2501 Suffix: AP Firmware Vintage:
   Schedule Download? y  Remove Image File After Successful Download? y
 Start Date/Time: 09/12/2002 13:30  Stop Date/Time: 09/12/2002 16:30

 Target     Target     Target     Target     Target
 Location    Location    Location    Location    Location
1. 01A10       11. _____    21. _____    31. _____    41 _____
2. _____    12. _____    22. _____    32. _____    42 _____
3. _____    13. _____    23. _____    33. _____    43. _____
4. _____    14. _____    24. _____    34. _____    44. _____
5. _____    15. _____    25. _____    35. _____    45. _____
6. _____    16. _____    26. _____    36. _____    46. _____
7. _____    17. _____    27. _____    37. _____    47. _____
8. _____    18. _____    28. _____    38. _____    48. _____
9. _____    19. _____    29. _____    39. _____    49. _____
0. _____    20. _____    30. _____    40. _____    50. _____

nter 5 character board number; cabinet(1-30):carrier(A-E):slot(0-20
```

If you are performing a C-LAN-distributed download, enter a C-LAN location as the source and 1 to 50 target locations, where the target boards are all of the same type. The following screen provides an example of a C-LAN-distributed download to 2 UDS1 circuit packs.

```
ıge firmware download                    Page  1 of  1
              FIRMWARE DOWNLOAD
ɔurce Board Location: 01A04
mware Image File Name: usd1v22r1
 Target Board Code: TN464 Suffix: GP Firmware Vintage:
 Schedule Download? y Remove Image File After Successful Download? y
tart Date/Time: 10/08/2002 22:00  Stop Date/Time: 10/08/2002 22:30

get     Target     Target     Target     Target
ation    Location    Location    Location    Location
 01B04    11. _____    21. _____    31. _____    41 _____
 01B05    12. _____    22. _____    32. _____    42 _____
 _____    13. _____    23. _____    33. _____    43. _____
 _____    14. _____    24. _____    34. _____    44. _____
 _____    15. _____    25. _____    35. _____    45. _____
 _____    16. _____    26. _____    36. _____    46. _____
 _____    17. _____    27. _____    37. _____    47. _____
 _____    18. _____    28. _____    38. _____    48. _____
 _____    19. _____    29. _____    39. _____    49. _____
 _____    20. _____    30. _____    40. _____    50. _____

ɐr 5 character board number; cabinet(1-30):carrier(A-E):slot(0-20)
```

3 Press **Enter** to submit the schedule.

If you set the `Schedule Download` field to **n**, the download starts as soon as you submit the schedule.

Note:
If you are scheduling firmware downloads for a circuit pack that is designated as primary/secondary sync (timing) source (for example, TN464GP), this procedure automatically redesignates a local timing source during the download. After the download is complete and the circuit pack is returned to service, the procedure designates the original circuit pack as the timing source.

Note:
The target circuit packs are automatically removed from service while the firmware is downloaded to them and automatically returned to service after the download is completed. While a circuit pack is removed from service, any active calls through that circuit pack are dropped.

Note:
An error message asking you to use the command, **test firmware download**, means that there was a problem with a previous firmware download. Run the test before proceeding. Go to “Testing firmware download” on page 352.

CAUTION:
Unless the `Remove Image File After Successful Download` field is set to **y**, the *ftplogin* and *ftppassword* remain on the TN799DP or TN799C (C-LAN) and TN2501AP (VAL) circuit packs either until they are reset or until you type the **disable filesystem board *UUCSS*** command.

4 If the download is scheduled for later, ensure that the download will run as you intend by testing the firmware download. Go to “Testing firmware download” on page 352.

Monitor download progress

You can check the progress of a firmware download with this procedure.

1 Type **status firmware download** and press **Enter** to display the Status Firmware Download screen.

```
status firmware download last

              STATUS FIRMWARE DOWNLOAD

 Source Board Location: 01A04
Firmware Image File Name: usd1v22r1
    Target Board Code: TN464 Suffix: GP Firmware Vintage: 8
    Schedule Download? y  Remove Image File After Successful Download? y
  Start Date/Time: 10/08/2002 22:00  Stop Date/Time: 10/08/2002 22:02

  Target     Target     Target     Target     Target
  Location St   Location St   Location St   Location St   Location St
 1. 01B04  C  11.       21.       31.       41.
 2. 01B05  C  12.       22.       32.       42.
 3.       13.       23.       33.       43.
 4.       14.       24.       34.       44.
 5.       15.       25.       35.       45.
 6.       16.       26.       36.       46.
 7.       17.       27.       37.       47.
 8.       18.       28.       38.       48.
 9.       19.       29.       39.       49.
10.       20.       30.       40.       50.
Status: Pending(P) Completed(C) Failed(F) Aborted(A)
```

If this form is blank, the download has completed; go to Step 3.

2 Check the `St` (status) field immediately to the right of the `Target Location` field to view the progress of the firmware update:

- **(P)**ending
- **(C)**ompleted
- **(F)**ailed
- **(A)**borted

3 Type **status firmware download last** and press Enter to view the progress of the last completed firmware update or the entire schedule if it is completed. Notice in the previous screen that the `Start` and `Stop` times now reflect the actual start and stop times of the download schedule and that the `Firmware Vintage` now reflects the vintage that was downloaded.

4 If one or more downloads fail, go to “Testing firmware download” on page 352.

5 If previously you set the `Remove Image File After Successful Download`? field on the Firmware Download screen to **y**, then the download procedure is now complete.

If you previously set it to **n**, then proceed to the next section, “Disable file system” on page 352, to manually remove the firmware image and disable the file system on the source circuit pack.

Reseat VAL circuit pack

For TN2501AP (VAL) circuit packs only, reseat the TN2501AP to reset the board after the download is complete.

CAUTION:
If you do not reseat the TN2501AP, then the pack runs using old firmware.

WARNING:
To prevent electrostatic discharge (ESD), be sure to wear a grounding strap while handling the circuit pack.

CAUTION:
Ensure that the top green and top amber LEDs on the TN2501AP are out.

1. Release the latch handle to free the TN2501AP from the carrier.
2. Pull the circuit pack out about 1 – 2 inches (3 – 5 cm).
3. Re-insert the circuit pack into the media gateway or carrier.
4. Close the latch securely.
5. Wait until all three of the top LEDs (red, green, and amber) are out.

Note:

Disable file system

Performing the following steps on the TN799DP (C-LAN) or TN2501AP (VAL) circuit packs removes only the *ftplogin* and the *ftppassword*. The allocated memory for the file system remains reserved for the session.

To free up resources on the source circuit pack, you must delete the new firmware image files and disable the file system.

1. Type **remove file board *UUCSS filename.ext*** and press **Enter** to remove the image file from the source board.
2. Type **list directory board *UUCSS*** and press **Enter**.
3. Check the `File/Directory Name` field to verify that the new firmware image file is *not* listed.
4. Type **disable filesystem board *UUCSS*** and press **Enter** to disable the file system on the source circuit pack.

Note:
This command is successful only if no files remain on the source circuit pack.

This completes the self- and C-LAN-distributed download procedures.

Troubleshooting firmware downloads

This section contains these troubleshooting subsections:

- “Aborting a firmware download” on page 352
- “Testing firmware download” on page 352
- “Backing out of a firmware download” on page 353

Aborting a firmware download

You can only abort (disable/cancel) a scheduled download that has not yet started. Any download currently in progress to a circuit pack finishes. For example, if you had scheduled a C-LAN distributed download to multiple targets and the download was in progress to the first circuit pack when you disabled the download, then the download would stop after the completion of the first circuit pack’s download and the remainder of the circuit packs would not receive the download.

To abort a self or C-LAN-distributed firmware download, enter the SAT command **disable firmware download**.

Testing firmware download

You can test a self- or C-LAN-distributed firmware download either before a scheduled download has begun or after an attempted download has reported errors.

1. Type **test firmware download** and press **Enter** to display the Test Results screen.

   If the download has already begun, the test is denied.

```
test firmware download                        SPE A

                 TEST RESULTS

Port    Maintenance Name Alt. Name Test No. Result      Error Code

      FW-DWNLD          1413    PASS
```

2 Look in the `Result` field for **FAIL/PASS** conditions.

The `Result` field in the screen shows **PASS**, indicating a successful test of the firmware download circuitry.

If the `Result` field shows **FAIL**, refer to the maintenance book ***//need full title here or link?//*** in the FW-DWNLD maintenance object section, subsection entitled System Technician-Demanded Tests: Descriptions and Error Codes. Resolve every error and rerun the test.

When the test passes, every specified resource is currently available for the scheduled download. Note, however, that this does *not* guarantee the resource will still be available at the time of the download.

Backing out of a firmware download

To back out of a completed firmware download and revert to the previous image, follow the same download procedure you did before, except use the previous firmware vintage instead. The exception is TN799DP (C-LAN) and TN2501AP (VAL), which have a separate procedure.

Reverting to an older TN799DP or TN2501AP vintage

To revert back to the old firmware image file on a TN799DP (C-LAN) or TN2501AP (VAL) only:

1 Type **get boot-image *UUCSS*** and press **Enter** to check the status of the firmware images on the target circuit pack. .

```
get boot-image 1C07

              DISPLAY FIRMWARE IMAGE(S)

       Image 1    Image 2

 Board Type: TN2501     TN2501
 FW Vintage: 02       01
HW Signature: 02       02
   Suffix: A       A
    Date: 09/13/02    05/06/02
  Timestamp: 10:30:50    12:42:18
CRC Checksum: Good      Good
Active Image: Yes      No
Reboot Image: Yes      No
```

2 Check the `Active Image:` field in the `Image 1` and `Image 2` columns to see where the active image resides.

3 Check the `Date` and `Timestamp` fields to determine whether to revert back to a previous image.

In the following example, we are reverting back to Image 2, because it has the older date and time stamp.

Note:

In most cases, the image with the more recent date and time stamp is the new firmware image file.

4 Type **set boot-image board *UUCSS* image 1 | 2** and press **Enter**.

Example: **set boot-image board 1C07 image 2**

The system responds with Command Successfully Completed.

5 Type **get boot-image *UUCSS*** and press **Enter** to check the status of the firmware images on the target circuit pack.

```
get boot-image 1C07

              DISPLAY FIRMWARE IMAGE(S)

       Image 1    Image 2

 Board Type: TN2501     TN2501
 FW Vintage: 02       01
HW Signature: 02       02
   Suffix: A       A
    Date: 09/13/02    05/06/02
  Timestamp: 10:30:50    12:42:18
CRC Checksum: Good      Good
Active Image: Yes      No
Reboot Image: No       Yes
```

Note that the values in the `Reboot Image` field has changed.

Note:

If a TN799C/DP C-LAN or TN2305 VAL circuit pack, reseat them to activate the new firmware image. Go to “Reseat VAL circuit pack” on page 351.

6 Type **get boot-image *UUCSS*** to check the status of the firmware images on the target circuit pack.

```
get boot-image 1C07

              DISPLAY FIRMWARE IMAGE(S)

       Image 1    Image 2

 Board Type: TN2501     TN2501
 FW Vintage: 02       01
HW Signature: 02       02
   Suffix: A       A
    Date: 09/13/02    05/06/02
  Timestamp: 10:30:50    12:42:18
CRC Checksum: Good      Good
Active Image: No       Yes
Reboot Image: No       Yes
```

7 Ensure that both the `Active Image` and the `Reboot Image` fields are as you expect.

Test Telephones and Other Equipment

This section describes how to test the telephones and other equipment. Perform these tests after the equipment has been wired to the system and after the customer's data for that equipment has been administered. The tests are acceptance tests and provide some assurance that the Avaya Media Gateways will perform properly after installation and administration.

If problems occur or more extensive tests are required, refer to the *Maintenance for Avaya MultiVantage™ DEFINITY Server* documentation.

Task List: Perform Acceptance Tests

1. Make Test Calls
2. Test 302C Attendant Console
3. Test Selector Console
4. Test External Ringing
5. Test Queue Warning Indicator
6. Test Integrated Announcement
7. Record Announcement
8. Playback Announcement
9. Delete Announcement
10. Test Music-on-Hold
11. Test Emergency Transfer
12. Test Remote Access Interface (formerly INADS)
13. Remote Test
14. Local Test
15. Test Basic Rate Interface (BRI)
16. Test Duplication Option Processing Element Interchange
17. Test Terminating Trunk Transmission
18. Test the C-LAN Connection
19. Test Stratum 3 Clock (if used)
20. Perform Complete System Test and Resolve Alarms
21. Activate and Test Alarm Origination Feature

Make Test Calls

Begin

Return to Task List

Make 2 calls from 1 telephone to another telephone. Make the first call by dialing a telephone and make the second call by dialing a trunk access code and a Listed Directory Number (LDN).

Test 302C Attendant Console

Begin

Return to Task List

Check all lamps are operational and call another telephone in the system.

1. Simultaneously press and hold the Ringer Volume up button and the POS BUSY button.

   This puts the console in the self-test mode.

Note:
Releasing the buttons returns the console to normal mode.

2. Verify all lamps on display light and remain lighted.

   Each row of lamps on the console lights and goes dark in sequence from top to bottom.

3. Press Start and listen for dial tone.
4. The green lamp associated with Idle Call Appearance lights up.

   The Position Available lamp goes dark.

5. Dial number associated with a working telephone.

   Audible ringing tone is heard in ear piece.

6. Press Release.

   Audible ringing tone is silenced. The green lamp associated with idle call appearance button goes dark. The Position Available lamp lights.

Return to Task List

Test Selector Console

Begin

Return to Task List

Check that all selector console lamps are operational. Make call to a telephone in the system.

1. Simultaneously press and hold the Ringer Volume up button and the POS BUSY button on the attendant console. This puts the console in the self-test mode.
2. Each row of lamps on the selector console lights and goes dark in sequence from top to bottom.
3. Press hundreds group select button. The hundreds group select lamp lights and any lamps associated with busy telephone light.
4. Press Direct Extension Selection (DXS) button for the desired extension. Audible ringing tone is heard in the earpiece on attendant console.
5. On attendant console, press Release. Audible ringing tone is silenced.

Return to Task List

Test External Ringing

Begin

Return to Task List

Make a test call to the attendant console to verify ringing device sounds when the Night lamp on console is lighted. If ringing device has not been installed by customer, connect spare telephone to information outlet reserved for ringing device and make test call.

Test Queue Warning Indicator

Begin

Return to Task List

Make a test call to an extension associated with a Uniform Call Distribution (UCD) or Direct Department Calling (DDC) group, and verify the queue warning indicator lamp lights. If the queue warning indicator has not been installed by customer, connect a spare telephone to the information outlet reserved for queue warning indicator and make a test call.

Test Integrated Announcement

Begin

Return to Task List

The TN750B/C and TN2501AP Announcement circuit packs provide the ability to store messages. The messages can be recorded from telephones on- or off-premises and have flexible message lengths. The telephone selected as the test telephone must have a class of service (COS) with console permission enabled.

Record Announcement

Begin

Return to Task List

1. Select test telephone with console permission enabled.
2. Dial the access code followed by the integrated announcement extension number. Dial tone is heard.
3. Dial “1.” A short burst of tone is heard and recording begins. Speak the announcement into the telephone.
4. Dial “#” or hang up. Recording stops and dial tone is heard.

Return to Task List

Playback Announcement

Begin

Return to Task List

1. Dial access code followed by the integrated announcement extension number. Dial tone is heard.
2. Dial “2.” The announcement is heard and dial tone is heard at completion of announcement.

Delete Announcement

Begin

Return to Task List

1. Dial access code followed by the integrated announcement extension number. Dial tone is heard.

2 Dial “3.” A confirmation tone is heard and announcement is deleted.

Test Music-on-Hold

Begin

Return to Task List

Verify music is provided to a held party during any hold interval.

Test Emergency Transfer

Begin

Return to Task List

Put system in emergency transfer mode and make call using emergency transfer telephone. There may be up to 4 Emergency Transfer switches depending on the system configuration. The switch is located on the Processor circuit pack(s) in the Processor Port Network (PPN) Control Carrier.

Test Remote Access Interface

Begin

Return to Task List

Test the communication link between the system and the remote interface (formerly INADS) and verify the alarm notification process. Make a remote test from the remote interface to the Avaya Media Gateway and a local test from the Avaya Media Gateway to the remote interface.

In some countries, this remote access interface is not allowed. Contact your Avaya representative.

Remote Test

Begin

Return to Task List

1 Call outside personnel who will be accessing the system remotely to perform administration, maintenance, and testing.

2 Ask remote personnel to call system and login and display System Parameters Maintenance screen. The login must be successful.

Note:
Product Identification on the System Parameters screen must match the Product Identification administered by the local technician.

3 Have the remote personnel type **test inads-link** and press **Enter**, terminate the login, and disconnect.

4 Have the remote personnel check the appropriate trouble ticket. The trouble ticket should show “INADS,n,MINOR” in the description field to indicate a minor off-board alarm was reported to the remote personnel. There may be more text in the description field if other resolved alarms were reported.

5 Have the remote personnel make second call and log into the system and check the error log to verify no problems. See *Maintenance for Avaya MultiVantage DEFINITY Server* documentation for your system for error log and error code information.

6 Have the remote access personnel terminate logoff and disconnect.

Return to Task List

Local Test

Begin

Return to Task List

1. Log in as **craft**.

Note:
If you have a **dadmin** login and password, you can use them instead of craft and the craft password.

2. Type **test inads-link** and press **Enter**.
3. Request remote access personnel to verify that a trouble ticket was created.
4. Check error log to verify no problems.
5. Log off the system.

Test Basic Rate Interface

Begin

Return to Task List

Check for normal voice telephone function (dial tone, ability to make and receive calls). Check for the correct Service Profile Identifier (SPID) on a display telephone and the management terminal.

Test Duplication Option Processing Element Interchange

Begin

Return to Task List

The process of the standby Processing Element (PE) taking over for the active PE is referred to as a PE Interchange. This interchange should not be performed immediately after powering up the system. Wait a few minutes to allow the system to complete its internal tests. The system default is **PE_B** after powering up the system, so the active PE should be the B processor for this test, and the interchange should make **PE_A** the active PE. Verify the system can successfully perform a PE interchange.

1. At the management terminal, verify the screen displays **PE_B** in the upper right corner.
2. Type **check status** and press **Enter**. Verify **PE_B** is in the standby mode. If it is, proceed to Step 4. If it is not, proceed to Step 3.
3. Type **refresh-spr-standby** and press **Enter**.
4. Type **reset system interchange** and press **Enter**. The management terminal will be logged off and a beep will be heard.
5. Login and verify that the screen displays **PE_A** in the upper right corner.

Note:
Processor A’s yellow light is on and its green LED is off. Processor B’s yellow and green LEDs are off. The system is alarm free.

6. Make system test call. The call must complete and the conversation must be satisfactory.

Return to Task List

Test Terminating Trunk Transmission

Begin

Return to Task List

The Terminating Trunk Transmission Test provides for extension number access to 3 tone sequences that can be used for trunk transmission testing from the distant end of the trunks.

The 3 test types must have extension numbers assigned on the **system-parameters maintenance** form:

`Test Type 100:_______Test Type 102:_______Test Type 105:_______`

Test Type	Test Features
Test type 100	5.5 seconds of 1004 Hz tone at 0 dB Quiet until disconnect; disconnect is forced after 1 minute
Test Type 102	9 seconds of 1004 Hz tone at 0 dB 1 second of silence Cycle is repeated until disconnect, which is forced after 24 hours
Test Type 105	9 seconds of 1004 Hz tone at -16 dB 1 second of silence 9 seconds of 404 Hz tone at -16 dB 1 second of silence 9 seconds of 2804 Hz tone at -16 dB 30 seconds of silence 0.5 seconds of test progress tone (2225 Hz) About 5 seconds of silence Forced disconnect

Return to Task List

Test the C-LAN Connection

Begin

Return to Task List

To test the external IP connections, ping the C-LAN circuit pack and ping a known computer connected to your network. If everything is configured correctly, the **Result** column on the Ping Results screen reads ***PASS***. If it reads ***ABORT***, verify the IP-address information and check the connectivity, including the cabling.

1. To ping the C-LAN server, type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **`Enter`**.

   The variable ***nnn.nnn.nnn.nnn*** is the IP address of the TN799x C-LAN circuit pack and ***UUCSS*** is the cabinet, carrier, and slot of the TN799x C-LAN circuit pack.

2. Type **ping ip-address *nnn.nnn.nnn.nnn* board *UUCSS*** and press **`Enter`**.

   The variable ***nnn.nnn.nnn.nnn*** is the IP address of another computer beyond the gateway and ***UUCSS*** is the cabinet, carrier, and slot of the TN799x C-LAN circuit pack.

The TN799x C-LAN circuit pack is now installed in the DEFINITY carrier and connected to the IP network.

Return to Task List

Test Stratum 3 Clock (if used)

Return to Task List

These procedures test the ability of the Stratum 3 clock to correctly provide timing and alarms to the system.

CAUTION:
The following procedures are destructive to DS1 data and should not be attempted while DS1 facilities are active.

Task List: Test Stratum 3 Clock

1. Check for Red LEDs
2. Verify Timing to the System

Check for Red LEDs

Begin

Return to Task List

1. Turn on the Stratum 3 clock and wait 40-50 seconds to allow the system to complete the on-board diagnostics before checking LEDs.
2. If there are any red LEDs, follow the procedures in Stratum 3 Clock LED Indicators.

Stratum 3 Clock LED Indicators

Card	LED Label	Procedure
PAI	REF A	Check that the CI circuit pack on the left is inserted properly. Check wiring for DS1 in carrier “A” which connects the system to the CSU and the External Synchronization Clock at the MDF through a Y-cable assembly. If all else fails to clear the LED then replace the circuit pack.
PAI	REF B	Check that the CI circuit pack on the right is inserted properly. Check wiring for DS1 in carrier B which connects the system to the CSU and the External Synchronization Clock at the MDF through a Y-cable assembly. If all else fails to clear the LED then replace the circuit pack.
PAI	ST A	Replace the ST3 card
PAI	ST B	Replace the ST3 card
CI	FAIL	Check wiring for its associated DS1 reference and replace the circuit pack if necessary
ST3	FAIL	Replace the circuit pack
ST3	LOCK	Ignore this LED
ST3	HOLDOVER	Ignore this LED

Stratum 3 Clock LED Indicators

Card	LED Label	Procedure
ST3	FREE RUN	Ignore this LED
TOCA	FAIL	Replace the circuit pack
TOCA	PORT ALM	Replace the circuit pack if necessary

Return to Task List

Verify Timing to the System

Begin

Return to Task List

1. To administer the Stratum 3 clock, type **change synchronization** and press **Enter**.
2. Type **3** in the **stratum** field.
3. Type the port network number where the TN780 Tone-Clock circuit packs reside in the **port network** field.

Note:
Wait 1 minute for the software to reconfigure the system synchronization.

4. Verify the results of test 649. If test 649 fails with a code of 2101, then check the wiring for **EXTSYN0** and **EXTSYN1**. Refer to *Maintenance for Avaya MultiVantage DEFINITY Server*.

If test 649 is successful, then the system is getting correct timing from the Stratum 3 clock.

Return to Task List

Perform Complete System Test

Begin

Return to Task List

Run the complete system test with the **Allports** option in the **SPE Interchange** and **Long Test** modes. The hardware group tests are described in the *Maintenance for Avaya MultiVantage DEFINITY Server* documentation for your system.

Note:
This test takes several hours. It may be best to run the test in the background, or at night, or both.

Resolve Alarms

Begin

Return to Task List

After the test has completed, inspect the alarms log. Type display alarms and resolve the alarms in the usual manner.

Check the error log for evidence of failure. The only failure results logged should be the outcome of tests requiring a connected station, where a station is not connected to the port under test. Repair all other failures or refer them to a maintenance technician for repair.

Resolve any alarms that may exist using the *Maintenance for Avaya MultiVantage DEFINITY Server* documentation for your system.

Return to Task List

Activate and Test Alarm Origination Feature

Begin

Return to Task List

1. Activate the Alarm Origination feature from the **change system-parameter maintenance** form.
2. Type **test inads link** and press **Enter** to verify the system can reach the INADS Database Administrator at the Technical Service Center (TSC).
3. Be sure the system is part of the existing INADS database by calling the INADS Database Administrator to verify the system can be dialed into and that the system can dial out to INADS.

   As part of the system registration process, the INADS Database Administrator enables Alarm Origination.

Have the serial number of the system and the software version number available at the time of the call.

Return to Task List

Option Switch Settings

Some of the interface units used between the system and other types of equipment require specific option switch settings for each application.

Task List: Option Settings

- Data Module Option Switch Settings and information:
  - ~ About DCS Switch Settings
  - ~ About 7400D Data Module Option Settings
- External Modem Option Settings
- Printer Option Settings
- Call Detail Recording Option Settings
- AUDIX Interface Option Settings
- TN760D Tie Trunk Circuit Pack Option Settings
- TN464/2464 Option Settings

Refer to the user's guide for each type of equipment for information on how to locate and set the option switches.

Data Module Option Switch Settings

Return to Task List

This section contains information

- About DCS Switch Settings
- About 7400D Data Module Option Settings

Task List: Data Module Switches and Options

- Set DCS Switches
- Set 7400D Options
- Set 7400A and 7400B Options

About DCS Switch Settings

The Distributed Communications System (DCS) for a system is connected to the system through the Processor Interface circuit pack. The first circuit can be connected directly to the DCS through the processor interface (PI) connector on the rear of the control carrier.

Any of the remaining three circuits on the processor interface used to support the Distributed Communications System (DCS) must be connected through a data module serving as the interface link. The option settings for a 7400A Data Module are shown in Data Module Option Switch Settings. Refer to Data Module DIP Switch Locations: for the location of the switches.

Data Module Option Switch Settings

DIP Switch	Function	Setting
1	With Phone Without Phone	ON OFF
5	Data Metering No Data Metering	ON OFF
8	Make Busy on Loc Loop No Make Busy on Loc Loop	ON OFF
2, 3, 4, 6, and 7		OFF

Data Module DIP Switch Locations:

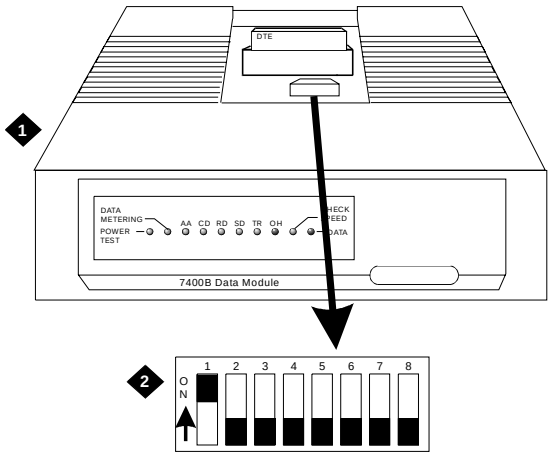


Figure Notes:

[1] Data Module (7400A Shown)

[2] DIP Switch

About 7400D Data Module Option Settings

The option settings shown in 7400 Series Data Module Options (Answer Only Interface) are for the Answer Only interface and are set from the front panel interface. Set only the desired speed of the 7400D. All other default settings can be used.

7400 Series Data Module Options (Answer Only Interface)

Set Option Display	Abbreviation	Possible Values	Default
Set 300 SPEED?	300	ON, OFF	ON
Set 1200 SPEED?	1200	ON, OFF	ON
Set 2400 SPEED?	2400	ON, OFF	ON
Set 4800 SPEED?	4800	ON, OFF	ON
Set 9600 SPEED?	9600	ON, OFF	ON

7400 Series Data Module Options (Answer Only Interface)

Set Option Display	Abbreviation	Possible Values	Default
Set 19200 SPEED?	19200	ON, OFF	ON
Set ANSWER?	ANS	AUTO, MANUAL	AUTO
Set CI LEAD?	CI	ON, OFF	OFF (See Note)
Set CH LEAD?	CH	ON, OFF	OFF (See Note)
Set CTS LEAD?	CTS	NORMAL, ON	ON
Set DCD LEAD?	DCD	NORMAL, ON	ON (See Note)
Set DSR LEAD?	DSR	NORMAL, ON	ON (See Note)
Set DTR DETECT?	DTR	0, 10, 20, 30, 50, 100 MSEC	50
Set DTR LEAD?	DTR	EIA STANDARD, IGNORE	EIA STANDARD
Set LL LEAD?	LL	ON, OFF	OFF
Set REMOTE LOOP?	REMLOOP	GRANT, DENY	GRANT
Set RI LEAD?	RI	CYCLE, ON	ON
Set RL LEAD?	RL	ON, OFF	OFF
Set SIGLS DISC?	SIGLS DISC	ON, OFF	ON
Set TIMING?	TIMING	INTERNAL, EXTERNAL	INT
Set TM LEAD?	TM	ON, OFF	OFF

Note:
It is recommended that CI and CH be set to ON, and DCD and DSR be set to NORMAL. This allows login information to be displayed on the screen without having to send a carriage return character.

Return to Task List

Set DCS Switches

Begin

Return to Task List

1. Remove the top cover from the data module. See DIP Switch Locations.
2. Switches 1, 5, and 8 are the only switches to be set. Refer to Data Module Option Switch Settings for the option switch settings.

Note:
The options for the 7400A and 7400C Data Modules are set from the front panel interface. For the 7400A, refer to *7400A Data Module User's Manual*. For the 7400C, refer to *DEFINITY Communications System High Speed Link User's Guide*.

DIP Switch Locations

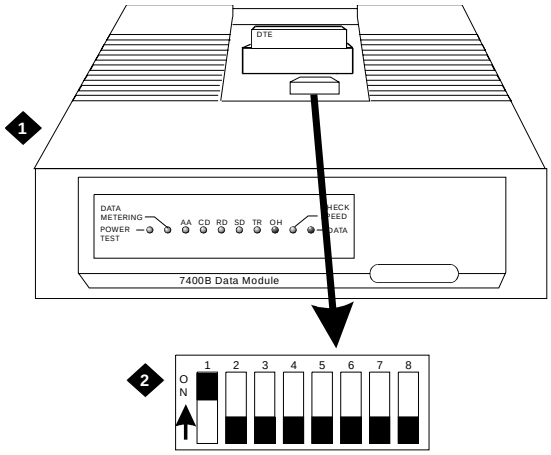


Figure Notes:

[1] Data Module (7400A Shown)

[2] DIP Switch

Data Module Option Switch Settings

DIP Switch	Function	Setting
1	With Phone Without Phone	ON OFF
5	Data Metering No Data Metering	ON OFF
8	Make Busy on Loc Loop No Make Busy on Loc Loop	ON OFF
2, 3, 4, 6, and 7		OFF

Return to Task List

Set 7400D Options

Begin

Return to Task List

The following steps are an example of how to change the default setting of 9600 to the custom setting of 19200.

Note:
If the link is between a R10r and a CMS, set the 7400D to 19200. If the link is between any other system and a CMS, leave the speed of the 7400D set at 9600.

1. From the **HOME** screen, press **NEXT/NO** until **SET OPTIONS ?** is displayed.
2. Press **ENTER/YES** to stay in the **SET OPTIONS ?** menu.
3. Press **NEXT/NO** until **SET 9600 SPEED ?** is displayed.
4. Press **ENTER/YES** when **SET 9600 SPEED ?** is displayed.
5. Press **NEXT/NO** when **9600 = ON ?** is displayed.
6. Press **ENTER/YES** when **9600 -> OFF ?** is displayed.

7 Press **ENTER/YES** when **CONTINUE ?** is displayed.

8 Press **ENTER/YES** when **SET 19200 SPEED ?** is displayed.

9 Press **NEXT/NO** when **19200 = OFF ?** is displayed.

10 Press **ENTER/YES** when **19200 -> ON ?** is displayed.

11 Press **NEXT/NO** when **CONTINUE ?** is displayed.

12 Press **ENTER/YES** when **19200 -> ON ?** is displayed.

13 Press **ENTER/YES** when **SAVE CHANGES ?** is displayed.

Note:
The **SET OPTIONS ?** menu cannot be terminated if all speeds are set to off.

Return to Task List

Set 7400A and 7400B Options

Begin

Return to Task List

Determine if the 7400A or 7400B will be interfacing with D-lead modems or attention control modems. Use Options for D-Lead and Attention Control Modems to interface with either modem. You can set options for the 7400B through a dumb terminal.

Options for D-Lead and Attention Control Modems

Set Option Display	Option	D-Lead Settings	Attention Control Settings
Set 300 Speed?	300	Note 1	Note 1
Set 1200 Speed?	1200	Note 1	Note 1
Set 2400 Speed?	2400	Note 1	Note 1
Set 4800 Speed?	4800	Note 1	Note 1
Set 9600 Speed?	9600	Note 1	Note 1
Set 19200 Speed?	19200	Note 1	Note 1
Set AT Control?	AT	OFF	ON
Set CI Lead?	CI	Note 2	Note 2
Set CI2 Lead?	CI2	Note 2	Note 2
Set CH Lead?	CH	Note 2	Note 2
Set CH2 Lead?	CH2	Note 2	Note 2
Set LL Lead?	LL	Note 2	Note 2
Set REMOTE Loop?	REMLOOP	Grant	Grant
Set RL Lead?	RL	Note 2	Note 2
Set SIGLS Disc?	SIGLS DISC	ON	ON
Set TM Lead?	TM	Note 2	Note 2

Note 1. Set speed to match remote modem. At least one speed must be set ON.

Note 2. Set to match remote modem.

Return to Task List

External Modem Option Settings

Return to Task List

The COMSPHERE 3700, 3800, and 3900 series (recommended) external modems may require option switch settings. Refer to the documentation that accompanies each modem to set the options.

Note:
A locally obtained, type-approved external modem may be used. Contact your Avaya representative for more information.

DEFINITY ECS operates with the COMSPHERE modems set to the factory default settings. The modem settings and descriptions are listed in Modem Fields.

Modem Fields

Modem Connection	Description
Modem Name	This field is 20 characters long and permits alphanumeric characters to provide a unique qualifier for a given modem (such as INTEL).
RTS/CTS Enabled	Informs the modem that communication with the data source UART is driven with RTS/CTS flow control. The field name has a default of \Q3 in a field 6 characters long. This field is not case sensitive. Default is upper case.
Asynchronous Data Mode	Configures modem as an asynchronous communications device. The field name has a default value of &M0&Q0 in a field 8 characters long. This field is not case sensitive. Default is upper case.
DTE Auto-Data Speed	Adjusts the speed of the data source (DTE) UART to the outgoing (modem-to-modem) data rate. At maximum, this speed is 9600 baud. It is not desirable to have the serial data fill the modem buffer faster than the outgoing data rate, since data compression is disabled. The field name has a blank default value in a field of 6 characters. Avaya products use the command **S90=1** to enable this functionality while the Intel product uses the command **\J1** to enable similar functionality. This field is not case sensitive. Default is upper case.
Disable Data Compression	Turns off the default data compression algorithms in use by most modems. The field has a blank field of 6 characters as default. The AT commands that control this are supported by similar commands; however, these commands do not operate in the same manner. The Intel modems require “H0%C0” to disable V.42bis & MNP Class 5 data compression algorithms. The Paradyne products only use %C0 to disable both algorithms. This field is not case sensitive. Default is upper case.
Enable Error Control	Turns on the V.42 LAPM and MNP error control protocols, if available. The field has a blank field of 6 characters as default. The Paradyne products use the command **\N5** to enable V.42/MNP/Buffer error control while the Intel product uses \N3 to provide similar functionality. This V.42/MNP/Buffer mode attempts to negotiate V.42 error control with the remote modem. If this fails, the modem changes to MNP, if this fails, no error control is used. This field is not case sensitive. Default is upper case.
Misc. Init. Param	This field has a blank as a default and a field length of 20 characters. This field supports any initialization parameters not already specified. The AT commands specified in this free-form field is always the last initialization parameters to be sent to the external modem. This field is not case sensitive. Default is upper case.

Modem Fields	
Modem Connection	**Description**
Auto-Answer Ring Number	This field controls the number of rings required before the modem answers an incoming call. This field has a blank default value in a field 6 characters long. Typically, the maximum permissible value for this register is 255. The values 1-255 denote the number of incoming ring cycles. This field is not case sensitive. Default is upper case.
Dial Type	This field controls the type of interregister signaling to be used between the modem and the Central Office. The field has a default of “T” for tone dialing. Pulse dialing is indicated by “P”. The field length should be 3 characters long. This field is concatenated with the dial string. This field is not case sensitive. Default is upper case.
Adjustable Make/Break Ratio	This field controls the make/break ratios of pulses and DTMF dialing. The Intel product information has support for different make/ break options for pulse dialing only. Intel uses &P0 to select a ratio of 39% make and 61% break for communication within the United States and Canada. The option &P1 sets a ratio of 33% make and 67% break for the United Kingdom and Hong Kong. This field has a blank default and a 5 character long entry. This field is not case sensitive. Default is upper case.
Dial Command	This field has a default of “D” in a field 3 characters long. This field denotes the dialing command of the modem. This is a standard command. This field is not case sensitive. Default is upper case.
No Answer Time-Out	Most external modems provide a timer that abandons any outbound data call after a predetermined interval. Some modems disable this timer, allowing an outbound call to ring indefinitely. Paradyne does not provide this capability because it is undesirable to have an outbound call attempt to ring indefinitely. Therefore, the initialization string must contain the following ASCII string to set the “No-Answer Timer” to the maximum value: S7=255. The internal modem must have this parameter disabled or set to at least 255 seconds. This is a non-administrable parameter. For the modem connection, this parameter is the first initialization string to be transmitted to the modem. This field is visible on the administration form in display mode only. The new field is set to S7=255. This hardcoded constant can be overridden for type approval applications, specifically in the United Kingdom and other Western European nations, by the use of the “Misc. Init. Param:” field. (S7=255)

Return to Task List

Printer Option Settings

Return to Task List

Printers can be used with a management terminal as journal printers for the hospitality feature and also as an output device for Call Detail Recording (CDR).

A572 printer can function as a CDR device, system printer, or journal printer. The options are set with function keys rather than DIP switches. Control Panel for 572 Printer shows the arrangement of the function keys on the printer control panel.

1. Load the printer with paper and turn the power off (Callout 1).
2. Simultaneously press and hold the **Print Quality** and **On Line** buttons. Press the **Power On** button. Release all three buttons. The printer is now in set-up mode and it prints current settings:

3 If the printer is used with a management terminal, CDR, or as a journal printer, set the options as shown in 572 Printer Used with Management Terminal, CDR, and Journal Printer. If the printer is used as the system printer, set the options as shown in 572 Printer Used as System Printer.

4 Use **Line Feed** or **Form Feed** to step through the options for the function.

5 Press **On Line**. This activates the menu for the function. Use **Line Feed** and **Form Feed** to step through the options for the function.

6 When a desired option is located, press **Print Quality**. Each time an option is set, the setting is printed. Repeat for each option to be set.

7 When finished, press **Print Quality**. The printer changes to normal mode.

Control Panel for 572 Printer

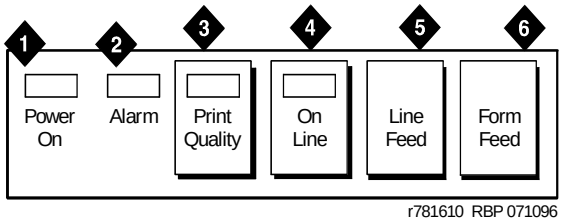


Figure Notes:

[1] Power On Button

[2] Alarm Button

[3] Print Quality Button

[4] On Line Button

[5] Line Feed Button

[6] Form Feed Button

Table 1.

572 Printer Used with Management Terminal, CDR, and Journal Printer			
Function	**Function Name**	**Menu**	**Menu Status**
01	FORM LENGTH	09	11
02	LPI	01	6
03	CPI	01	10
04	LQ or NLQ	01	LQ
05	BUZZER	01	ON
06	FONT	02	FONTCART
07	RESOLUTION	01	144
11	BUFFER	02	N-LINE
13	PW ON MODE	01	ON-LINE
14	DIRECTION	01	B1-DIR.1
15	BUFF FULL	02	LF + CR
16	P.E.	01	ACTIVE

Table 1.

17	AUTO CARRIAGE RETURN (CR)	01	CR + LF
18	ZERO	01	0
22	AUTO LINE FEED	01	CR ONLY
31	1'' SKIP	01	OFF
32	CHAR.SET (GO, GL)	02	USA
33	CHAR.SET (G1, GR)	01	UK
34	CHAR SET (G2)	03	GE
35	CHAR SET (G3)	07	LINE DRAWING
81	OFF-LINE STATE	01	ALL RECEIVE
82	DSR	02	OFF
83	REQUEST TO SEND (RTS) TIMING	01	RTS
84	CD	02	OFF
85	CLEAR TO SEND (CTS)	02	OFF
91	OVER RUN	02	256
92	DATA BIT	02	8
93	PROTOCOL	03	XON/XOFF
94	STOP BIT	01	1
95	PARITY	01	NONE
96	PBS (matches connected device)	01	9600

Table 2.

572 Printer Used as System Printer			
Function	**Function Name**	**Menu**	**Menu Status**
01	FORM LENGTH	09	11
02	LPI	01	6
03	CPI	01	10
04	LQ or NLQ	01	LQ
05	BUZZER	01	ON
06	FONT	02	FONTCART
07	RESOLUTION	01	144
11	BUFFER	02	N-LINE
13	PW ON MODE	01	ON-LINE
14	DIRECTION	01	B1-DIR.1
15	BUFF FULL	02	LF + CR
16	P.E.	01	ACTIVE
17	AUTO CARRIAGE RETURN (CR)	01	CR + LF
18	ZERO	01	0

Table 2.

572 Printer Used as System Printer			
Function	**Function Name**	**Menu**	**Menu Status**
22	AUTO LINE FEED	01	CR ONLY
31	1’’ SKIP	01	OFF
32	CHAR.SET (GO, GL)	02	USA
33	CHAR.SET (G1, GR)	01	UK
34	CHAR SET (G2)	03	GE
35	CHAR SET (G3)	07	LINE DRAWING
81	OFF-LINE STATE	01	ALL RECEIVE
82	DSR	02	OFF
83	REQUEST TO SEND (RTS) TIMING	01	RTS
84	CD	02	OFF
85	CLEAR TO SEND (CTS)	02	OFF
91	OVER RUN	02	256
92	DATA BIT	02	8
93	PROTOCOL	03	XON/XOFF
94	STOP BIT	01	1
95	PARITY	01	NONE
96	PBS	04	1200

Return to Task List

Call Detail Recording Option Settings

Return to Task List

The interface between the system and Call Detail Recording (CDR) equipment may be one of the following:

- Data Module — Recommended option settings are shown in Options for D-Lead and Attention Control Modems.
- Modem — Recommended option settings are in modem vendor document
- TN726 Data Line circuit pack and an Asynchronous Data Unit — Data modules or modems are not required.
- Connected directly to the **DCE** connector (Electronic Industries Association [EIA] Port) located on the rear of the Control Carrier — Data modules or modems are not required.

A 572 Printer can be used as an output receiving device for Call Detail Recording (CDR). The recommended option settings for this printer are shown in 572 Printer Used with Management Terminal, CDR, and Journal Printer and 572 Printer Used as System Printer. Also, a TELESEER, Call Detail Recording (CDR), 94A Local Storage Unit (LSU), or Customer Premises Equipment (CPE) can be used as the output receiving device.

Administration procedures for Call Detail Recording (CDR) equipment are provided in *Administrator's Guide for Avaya Communication Manager*.

Options for D-Lead and Attention Control Modems			
Set Option Display	**Option**	**D-Lead Settings**	**Attention Control Settings**
Set 300 Speed?	300	Note 1	Note 1
Set 1200 Speed?	1200	Note 1	Note 1
Set 2400 Speed?	2400	Note 1	Note 1
Set 4800 Speed?	4800	Note 1	Note 1
Set 9600 Speed?	9600	Note 1	Note 1
Set 19200 Speed?	19200	Note 1	Note 1
Set AT Control?	AT	OFF	ON
Set CI Lead?	CI	Note 2	Note 2
Set CI2 Lead?	CI2	Note 2	Note 2
Set CH Lead?	CH	Note 2	Note 2
Set CH2 Lead?	CH2	Note 2	Note 2
Set LL Lead?	LL	Note 2	Note 2
Set REMOTE Loop?	REMLOOP	Grant	Grant
Set RL Lead?	RL	Note 2	Note 2
Set SIGLS Disc?	SIGLS DISC	ON	ON
Set TM Lead?	TM	Note 2	Note 2

Table 3.

572 Printer Used with Management Terminal, CDR, and Journal Printer			
Function	**Function Name**	**Menu**	**Menu Status**
01	FORM LENGTH	09	11
02	LPI	01	6
03	CPI	01	10
04	LQ or NLQ	01	LQ
05	BUZZER	01	ON
06	FONT	02	FONTCART
07	RESOLUTION	01	144
11	BUFFER	02	N-LINE
13	PW ON MODE	01	ON-LINE
14	DIRECTION	01	B1-DIR.1
15	BUFF FULL	02	LF + CR
16	P.E.	01	ACTIVE
17	AUTO CARRIAGE RETURN (CR)	01	CR + LF
18	ZERO	01	0

Table 3.

22	AUTO LINE FEED	01	CR ONLY
31	1’’ SKIP	01	OFF
32	CHAR.SET (GO, GL)	02	USA
33	CHAR.SET (G1, GR)	01	UK
34	CHAR SET (G2)	03	GE
35	CHAR SET (G3)	07	LINE DRAWING
81	OFF-LINE STATE	01	ALL RECEIVE
82	DSR	02	OFF
83	REQUEST TO SEND (RTS) TIMING	01	RTS
84	CD	02	OFF
85	CLEAR TO SEND (CTS)	02	OFF
91	OVER RUN	02	256
92	DATA BIT	02	8
93	PROTOCOL	03	XON/XOFF
94	STOP BIT	01	1
95	PARITY	01	NONE
96	PBS (matches connected device)	01	9600

Table 4.

572 Printer Used as System Printer			
Function	**Function Name**	**Menu**	**Menu Status**
01	FORM LENGTH	09	11
02	LPI	01	6
03	CPI	01	10
04	LQ or NLQ	01	LQ
05	BUZZER	01	ON
06	FONT	02	FONTCART
07	RESOLUTION	01	144
11	BUFFER	02	N-LINE
13	PW ON MODE	01	ON-LINE
14	DIRECTION	01	B1-DIR.1
15	BUFF FULL	02	LF + CR
16	P.E.	01	ACTIVE
17	AUTO CARRIAGE RETURN (CR)	01	CR + LF
18	ZERO	01	0
22	AUTO LINE FEED	01	CR ONLY
31	1’’ SKIP	01	OFF

Table 4.

572 Printer Used as System Printer			
Function	**Function Name**	**Menu**	**Menu Status**
32	CHAR.SET (GO, GL)	02	USA
33	CHAR.SET (G1, GR)	01	UK
34	CHAR SET (G2)	03	GE
35	CHAR SET (G3)	07	LINE DRAWING
81	OFF-LINE STATE	01	ALL RECEIVE
82	DSR	02	OFF
83	REQUEST TO SEND (RTS) TIMING	01	RTS
84	CD	02	OFF
85	CLEAR TO SEND (CTS)	02	OFF
91	OVER RUN	02	256
92	DATA BIT	02	8
93	PROTOCOL	03	XON/XOFF
94	STOP BIT	01	1
95	PARITY	01	NONE
96	PBS	04	1200

Return to Task List

AUDIX Interface Option Settings

Return to Task List

The Audio Information Exchange (AUDIX) is sometimes connected to the system through the TN765 Processor Interface circuit pack. The first circuit on the processor interface can be connected directly to the AUDIX through the **PI** connector on the rear of the control carrier.

Any of the remaining three circuits on the processor interface to be used to support AUDIX must be connected through a 7400D Data Module serving as the interface link for AUDIX. The option settings are shown in Data Module Settings for DEFINITY AUDIX.

Data Module Settings for DEFINITY AUDIX

DIP Switch 1	Setting
9600	ON
SYNC	ON
INT	ON
AANS	ON
All Other Switches	OFF

Return to Task List

TN760D Tie Trunk Circuit Pack Option Settings

Return to Task List

The TN760D Tie Trunk circuit pack interfaces between the tie trunks and the Time Division Multiplex (TDM) bus. Two tip and ring pairs form a 4-wire analog transmission line. An E and M pair is used for signaling and are DC signaling leads used for call setup. The E lead receives signals from the tie trunk and the M lead transmits signals to the tie trunk.

To choose the preferred signaling format (Signaling Formats for TN760D and Signaling Type Summary), set the switches on the TN760D and administer the port per TN760D Tie Trunk Circuit Pack (Component Side) and TN760D Option Switch Settings and Administration.

CAUTION:
To prevent damage from static electricity, wear an EMC wrist strap when handling circuit packs or other components.

Signaling Formats for TN760D

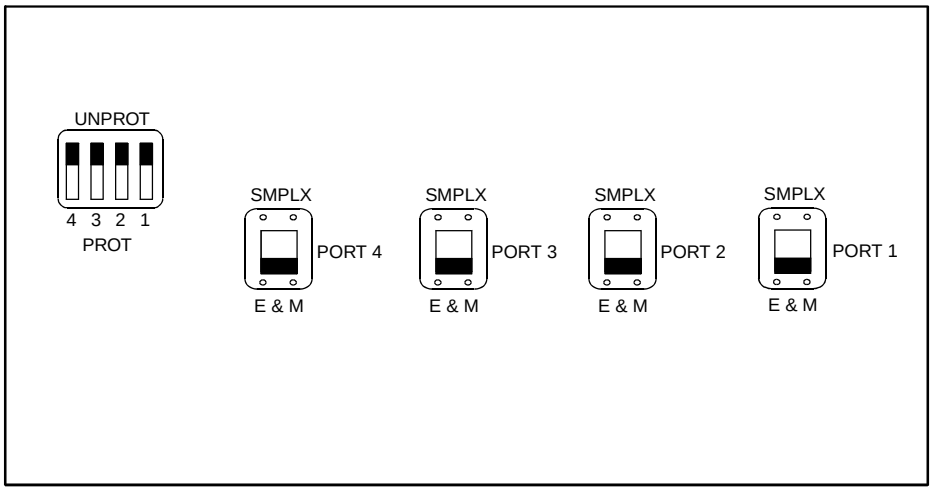
Mode	Type
E & M	Type I Standard (unprotected)
E & M	Type I Compatible (unprotected)
Protected	Type I Compatible, Type I Standard
Simplex	Type V
E & M	Type V
E & M	Type V Revised

Signaling Type Summary

Signaling	Transmit (M-Lead)		Receive (E-Lead)	
Type	On-Hook	Off-Hook	On-Hook	Off-Hook
Type I Standard	grd	bat	open[1]/bat	grd
Type I Compatible	open1/bat	grd	grd	open1/bat
Type V	open1/bat	grd	open	grd
Type V Reversed	grd	open	grd	open

1. An open circuit is preferred instead of battery voltage.

TN760D Tie Trunk Circuit Pack (Component Side)



r758183 RBP 050896

TN760D Option Switch Settings and Administration

Installation Situation		Preferred Signaling Format		Set E&M/ SMPLX Option Switch	Set Prot/ Unprot Option Switch	Administered Port
Circumstance	To	System	Far-End			
Co-Located	Sys75/G1	Simplex	Simplex	SMPLX	Either	Type 5
		Type 5	Type 5			
Inter-Building	Sys75/G1	Simplex	Simplex	SMPLX	Either	Type 5
		Type 5	Type 5			
Co-Located	Sys85/G2	Simplex	Simplex	SMPLX	Either	Type 5
		Type 5	Type 5			
Inter-Building	Sys85/G2	Simplex	Simplex	SMPLX	Either	Type 5
		Type 5	Type 5			
Co-Located	DIMENSION	E&M Type 1	E&M Type 1	E&M	Unprotected	Type 1
	PBX	Compatible	Standard			Compatible
Inter-Building	DIMENSION	Protected Type 1	Protected Type 1	E&M	Protected	Type 1
	PBX	Compatible	Standard			Compatible
Co-Located	Other	E&M Type 1	E&M Type 1	E&M	Unprotected	Type 1
		Compatible	Standard			Compatible
Inter-Building	Other	Protected Type 1	Protected Type 1	E&M	Protected	Type 1
		Compatible	Standard Plus			Compatible
			Protection			

TN760D Option Switch Settings and Administration

Installation Situation		Preferred Signaling Format		Set E&M/ SMPLX Option Switch	Set Prot/ Unprot Option Switch	Administered Port
Circumstance	To	System	Far-End			
			Unit			
Co-Located	Net Integrated	E&M Type 1	Any PBX	E&M	Unprotected	Type 1
		Standard				

Return to Task List

TN464/2464 Option Settings

Return to Task List

The TN464/2464 DS1/E1 Interface-T1/E1 circuit pack interfaces between a 24 or 32 channel CO/ISDN or tie trunk and the Time Division Multiplexing (TDM) bus.

Set the switches on the circuit pack to select bit rate and impedance match. See Option Switch Settings on TN464/2464 and TN464/2464 Option Settings.

Option Switch Settings on TN464/2464

120 ohms	Twisted pair
75 ohms	Coaxial requiring 888A adapter
32 channel	2.048 Mbps
24 channel	1.544 Mbps

TN464/2464 Option Settings

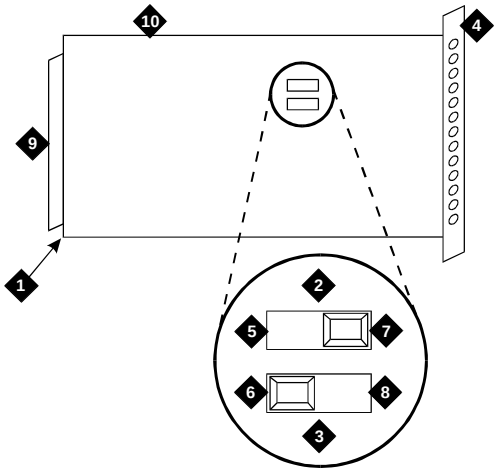


Figure Notes:

[1] Backplane Connectors

[2] 24/32-Channel Selector

[3] 75/120-ohm Selector

[4] Faceplate

[5] 32 Channel

[6] 120 ohm (shown selected)

[7] 24 Channel (shown selected)

[8] 75 ohm

[9] Connector

[10]TN464/2464

Return to Task List

Approved Grounds

An approved ground is the closest acceptable medium for grounding the building entrance protector, entrance cable shield, or single-point ground of electronic telephony equipment. If more than 1 type of approved ground is available on the premises, the grounds must be bonded together as required in Section 250-81 of the National Electrical Code.

Grounded Building Steel — The metal frame of the building where it is effectively grounded by 1 of the following grounds: acceptable metallic water pipe, concrete encased ground, or a ground ring.

Acceptable Water Pipe — A metal underground water pipe, at least 1/2-in. (1.3 cm) in diameter, in direct contact with the earth for at least 10 ft (3 m). The pipe must be electrically continuous (or made electrically continuous by bonding around insulated joints, plastic pipe, or plastic water meters) to the point where the protector ground wire connects. A metallic underground water pipe must be supplemented by the metal frame of the building, a concrete encased ground, or a ground ring. If these grounds are not available, the water pipe ground can be supplemented by 1 of the following types of grounds:

- Other local metal underground systems or structures — Local underground structures such as tanks and piping systems
- Rod and pipe electrodes — A 5/8-in. (1.6 cm) solid rod or 3/4-in. (2 cm) conduit or pipe electrode driven to a minimum depth of 8 ft (2.4 m).
- Plate electrodes — Must have a minimum of 2 square ft (0.185 square m) of metallic surface exposed to the exterior soil

Concrete Encased Ground — An electrode encased by at least 2 in. (5.1 cm) of concrete and located within and near the bottom of a concrete foundation or footing in direct contact with the earth. The electrode must be at least 20 ft (6.1 m) of 1 or more steel reinforcing bars or rods 1/2-in. (1.3 cm) in diameter, or at least 20 ft (6.1 m) of bare, solid copper, 4 AWG (26 mm^2) wire.

Ground Ring — A buried ground that encircles a building or structure at a depth of at least 2.5 ft (0.76 m) below the earth's surface. The ground ring must be at least 20 ft (6.1 m) of 2 AWG (35 mm^2), bare, copper wire.

Approved Floor Grounds

Approved floor grounds are those grounds on each floor of a high-rise building suitable for connection to the ground terminal in the riser closet and to the cabinet equipment single-point ground terminal. Approved floor grounds may include the following:

- Building steel
- The grounding conductor for the secondary side of the power transformer feeding the floor
- Metallic water pipes
- Power feed metallic conduit supplying panel boards on the floor
- A grounding point specifically provided in the building for the purpose

WARNING:
If the approved ground or approved floor ground can only be accessed inside a dedicated power equipment room, then connections to this ground should be made by a licensed electrician.

Connecting and Handling Fiber Optic Cables

Signals between the cabinets composing the system are carried by fiber optic cables. To accomplish this, the electronic signals at the connectors on the back of a cabinet must be converted into optical signals, and optical signals from another cabinet must be converted back into electronic signals. Opto-electronic devices (lightwave transceivers) provide this interface.

LASER Product

The Avaya Media Gateway may contain a Class 1 LASER device if single-mode fiber optic cable is connected to a remote Expansion Port Network (EPN). The LASER device operates within the following parameters:

- Maximum Power Output: -5 dBm
- Wavelength: 1310 nm
- Mode Field Diameter: 8.8 micrometers

CLASS 1 LASER PRODUCT

IEC 825 1993

CAUTION:
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Contact your Avaya representative for more information.

Detailed Information

See Optical Cross-Connect Hardware for hardware details.

See Cleaning Fiber Optic Cables for cleaning instructions.

Optical Cross-Connect Hardware

Optical cross-connects consist of Lightguide Interconnect Units (LIUs) with lightguide troughs in between them. Typical Optical Lightguide Interconnect Unit shows a typical LIU. One LIU terminates the incoming cables and the other terminates the outgoing cables. A fiber optic patch cord or jumper is used to connect the circuits. Circuits can be rerouted the same as on 110-type connecting blocks, by moving the patch cord from one point on the Main Distribution Frame (MDF) to another.

Optical interconnects consist of Lightguide Interconnect Units (LIUs) without a trough between them. Typical Optical Interconnect Field shows a typical Interconnect field. Incoming and outgoing multi-mode and single-mode cables are connected directly to each other. This arrangement makes circuit changes more difficult, but reduces optical losses.

Task List: Optical Cross-connect and Interconnect Hardware Descriptions

- 100A Lightguide Interconnect Unit

- 10A Lightguide Connector Panel and Couplings:
  C2000A-2 Connector Coupling (Multi-Mode) or
  C3000A-2 Connector Coupling (Single-Mode)
- Lightguide Troughs (1A4 Lightguide Trough and 1A6 Lightguide Trough)
- Fiber Interconnection Cable (Multi-Mode or Single-Mode Fiber Interconnect Cable)
- Labels for Fiber Optic Cables

Typical Optical Lightguide Interconnect Unit

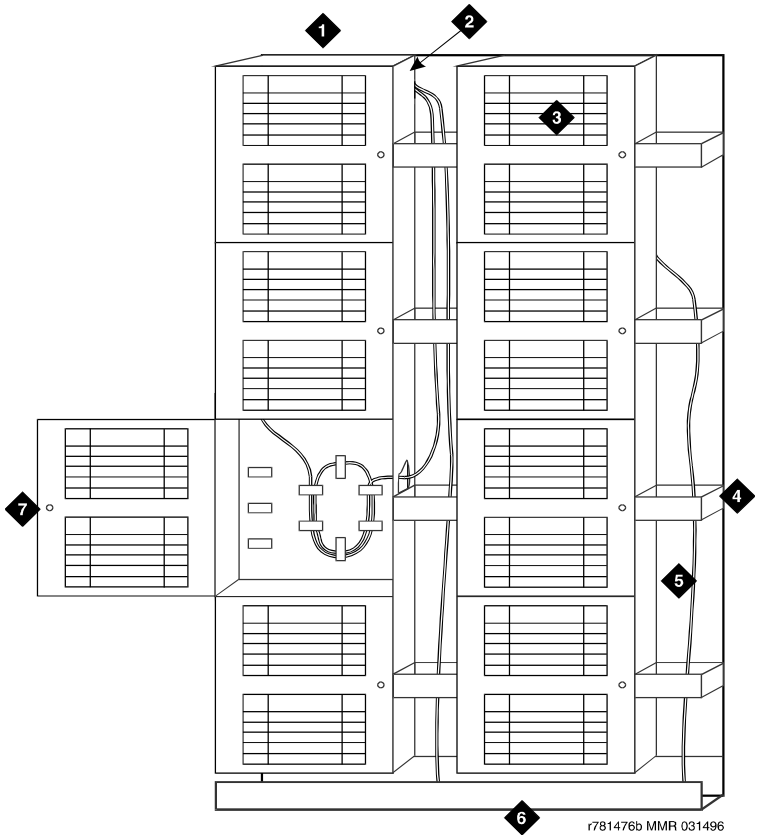


Figure Notes:

[1] 100A Lightguide Interconnect Unit (LIU)

[2] Multi-Mode Connector (C2000A-2)
Single-Mode Connector (C3000A-2)

[3] Adhesive-Backed Circuit Labels

[4] 1A4 Lightguide Trough

[5] Fiber Patch Cord

[6] 1A6 Lightguide Trough

[7] Open Lightguide Interconnect Unit (LIU)

Typical Optical Interconnect Field

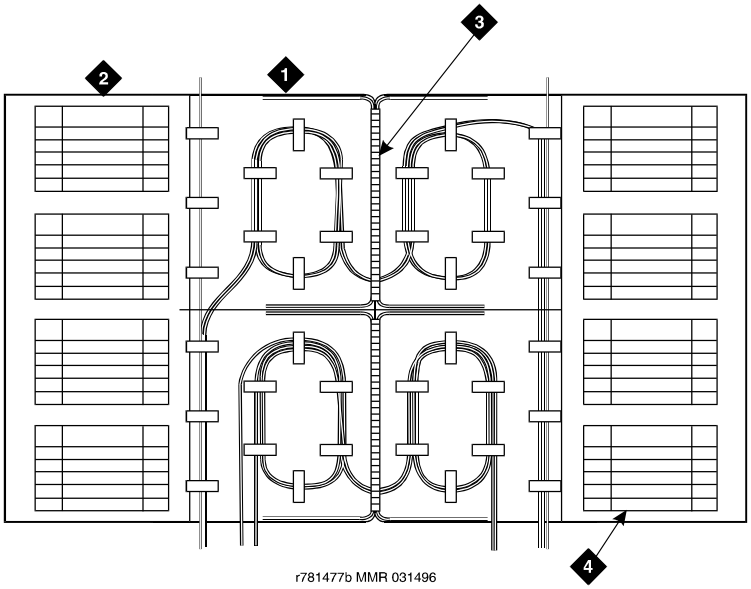


Figure Notes:

[1] 100A Lightguide Interconnect Unit (LIU)

[2] Open Lightguide Interconnect Unit (LIU) Door

[3] C2000A-2 Connector (Multi-Mode)
C3000A-2 Connector (Single-Mode)

[4] Labels

100A Lightguide Interconnect Unit

Return to Task List

The 100A Lightguide Interconnect Unit (LIU) consists of a cabinet with retainer rings to hold slack fiber cables, mounting cutouts for two 10A lightguide connector panels, and a door with circuit labels on each side. See 100A Lightguide Interconnection Unit.

100A Lightguide Interconnection Unit

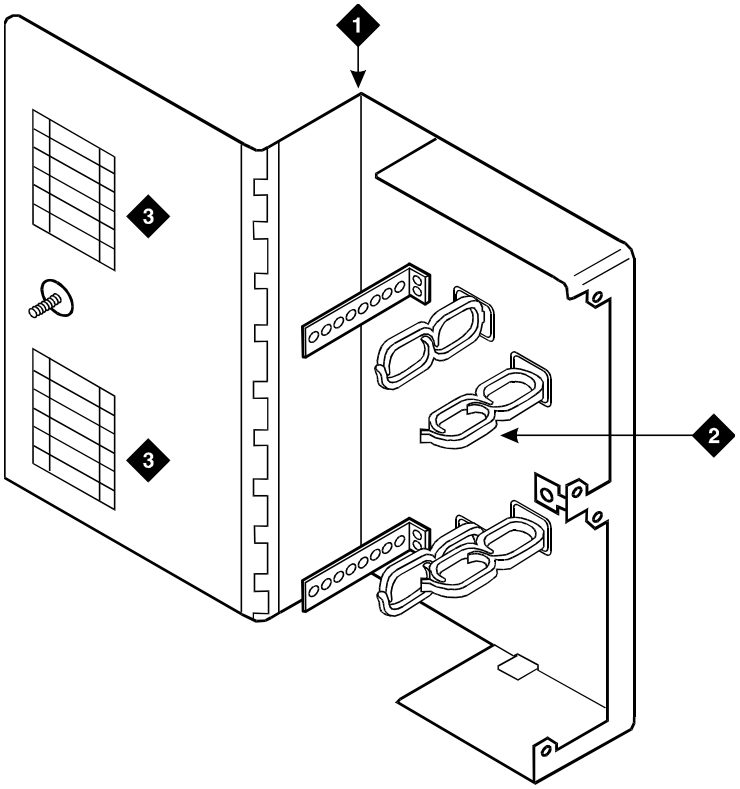


Figure Notes:

[1] 100A Lightguide Interconnect Unit (LIU)

[2] Retainer Rings

[3] Circuit Labels

Return to Task List

10A Lightguide Connector Panel and Couplings

Return to Task List

The 10A Lightguide Connector Panel mounts in the cutouts of a 100A Lightguide Interconnect Unit (LIU). An LIU contains two connector panels. Each connector panel can hold six C2000A-2 Connector Couplings.

Use the C2000A-2 Connector Coupling to join multimode fiber optic cables equipped with ST connectors. It has a threaded midsection that allows it to be screwed into the 10A Lightguide Connector Panel.

Use the C3000A-2 Connector Coupling to join single-mode fiber optic cables equipped with ST connectors. It has a threaded midsection that allows it to be screwed into the 10A Lightguide Connector Panel.

Return to Task List

Lightguide Troughs

Return to Task List

Two types of troughs are used with optical cross-connect hardware. The 1A4 trough secures single fiber optic jumpers routed between Lightguide Interconnect Unit (LIU) columns, and the 1A6 trough is used at the bottom of an LIU column to prevent cable slack.

Fiber Interconnection Cable

Return to Task List

Both multi-mode and single-mode fiber interconnection cable are available.

Multimode Fiber Cable

The multimode fiber interconnection cables are used as patch cords and to connect fiber optic equipment to lightguide cross-connect and interconnect fields. This is a dual fiber cable equipped with ST connector plugs on each end.

The following components are used in multi-mode fiber optic connections:

- Expansion Interface (EI) circuit packs in port slots in cabinet carriers
- Cables from each interface circuit pack to each port slot connector
- The 9823A lightwave transceiver transmits up to 4900 feet (1.5 km). The 9823B lightwave transceiver transmits up to 25,000 feet (7.6 km).
- Multimode fiber optic cable consists of two separate 62.5 micrometer diameter fiber optic cables or 50 micrometer diameter fiber optic cables.

Single-mode Fiber Cable

The single-mode fiber interconnection cables are used as patch cords and to connect fiber optic equipment to lightguide cross-connect and interconnect fields. This is a dual fiber cable equipped with ST connector plugs on each end.

Note:
5 and 10dB attenuators are available. Contact your Avaya representative for more information.

The following components are used in single-mode fiber optic connections:

- Expansion Interface (EI) circuit packs in port slots in cabinet carriers
- Cables from each interface circuit pack to each port slot connector
- The 300A lightwave transceivers transmits light up to 115,000 feet (35 km). Fiber loss must be less than 17dB. Saturation may occur if distances are short; attenuators may be required if the total loss on the fiber link is less than 10dBm. An Optical Time Domain Reflectometer (OTDR) test is recommended to determine specific fiber optic hardware requirements.
- Single-mode fiber optic cable consists of two separate 8 to 10 micrometer core cables.

Note:
5 and 10dB attenuators are available. Contact your Avaya representative for more information.

Return to Task List

Labels for Fiber Optic Cables

Return to Task List

There are two types of labels used with fiber optic cables:

- Cable labels
- Cross-connect labels

Cable labels are used on the cables, and cross-connect labels are used on the cross-connect equipment.

Cable Labels

Cable labels, with adhesive backing, are installed on each end of a fiber optic cable. Each label displays the following information:

- The numbers of the cabinets, carriers, and slots connected by the cable
- Information on the cable itself, such as cable comcode number, and how it is used

Cross-Connect Labels

The label used with cross-connect fiber optic cables shows the cabinet, carrier and slot numbers of the source of the cable. It also indicates that the cable goes to the Main Distribution Frame (MDF).

Return to Task List

Cleaning Fiber Optic Cables

Begin

The use of isopropyl alcohol is recommended to properly clean fiber optic cables. Contact your Avaya representative for more information.

1. Moisten a lint-free cloth with isopropyl alcohol.
2. Wipe the ceramic ferrule with the cloth. Be sure to wipe the entire length of the ferrule and the ferrule tip.
3. Dry the ferrule with air.
4. If the connector is not being used immediately, cover the connector with the dust cap.

Install Fiber Optic Cable Pass-Thru Kit for MCC1 (Multicarrier) Cabinets

This section details the installation of the fiber optic pass-thru kit for multi-carrier cabinets (MCC1) only. This kit provides the equipment necessary to install the fiber optic connectors and associated cabling.

Install the fiber optic cable pass-thru kit (MCC1)

Use this task list to install the fiber optic cable in the MCC1 (multicarrier) cabinet:

1. Prepare the cabinet
2. Install the Pass-Thru Kit
3. Test the Installation

LASER Product

CLASS 1 LASER PRODUCT
IEC 825 1993

The Avaya Media Gateway may contain a Class 1 LASER device if single-mode fiber optic cable is connected to a remote Expansion Port Network (EPN). The LASER device operates within the following parameters:

- Maximum Power Output: -5dBm
- Wavelength: 1310 nm
- Mode Field Diameter: 8.8 microns

CAUTION:
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Contact your Avaya representative for more information.

Prepare the cabinet

Begin

Return to Task List

1. Verify the equipment received.

   See Fiber pass-thru kit equipment. Actual equipment may vary in appearance and may ship in separate packages.

2. Open the front door.

Note:
Administration may be required before removing the circuit pack in the following step.

3. Determine which slot (1 or 2) will contain the new fiber optic circuit pack. Remove the circuit pack or the blanking plate from this slot.

Note:
If a circuit pack is removed from the required slot, it must be installed into a different slot in the cabinet. All translations associated with this circuit pack must also be moved.

4 Remove the circuit pack or the blanking plate from the slot next to the slot determined in step 3. Two consecutive open slots are required to install the fiber optic adapter.

Note:
If a circuit pack was removed in step 4, it will be replaced into the same slot in the next procedure.

5 Install the new circuit pack.

6 Open the rear door.

7 From the rear, remove the I/O cable connector plate associated with the slot that will contain the new fiber optic circuit pack. See Remove the I/O cable connector.

8 Using a supplied cable tie, secure the removed I/O connector to nearby cabling. See Secure the I/O cable connector.

9 From the front, remove the fan cover. See Remove the fan cover.

Fiber pass-thru kit equipment

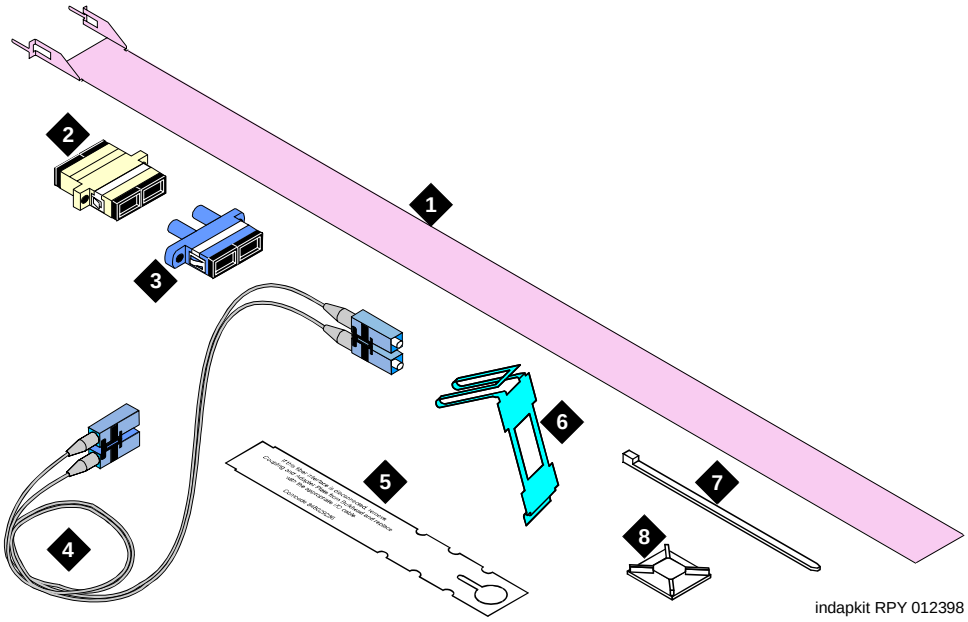


Figure Notes:

[1] Pass-thru Tool

[2] SC-SC Fiber Optic Adapter

[3] ST-SC Fiber Optic Adapter

[4] Fiber Optic Cable (Multimode or Single-mode)

[5] Fiber Optic Cable Disconnect Label

[6] I/O Connector Adapter Bracket

[7] Cable Tie

[8] Cable Tie Mount

Fiber Pass-Thru Kit Equipment list

List of Fiber Pass-Thru Kit Equipment	
Quantity	**Description**
1	Pass-thru Tool
1	Beige SC-SC Fiber Optic Adapter (multimode)
1	Beige ST-SC Fiber Optic Adapter (multimode)
1	Ten-foot (3 m) Fiber Optic Cable (multimode)
1	Beige SC-SC Fiber Optic Adapter (single-mode)
1	Beige ST-SC Fiber Optic Adapter (single-mode)
1	10-ft. (3 m) Fiber Optic Cable (single-mode)
1	I/O Connector Adapter Bracket
1	Fiber Optic Cable Disconnect Label
10	Cable Ties
6	Cable Tie Mounts

Remove the I/O cable connector

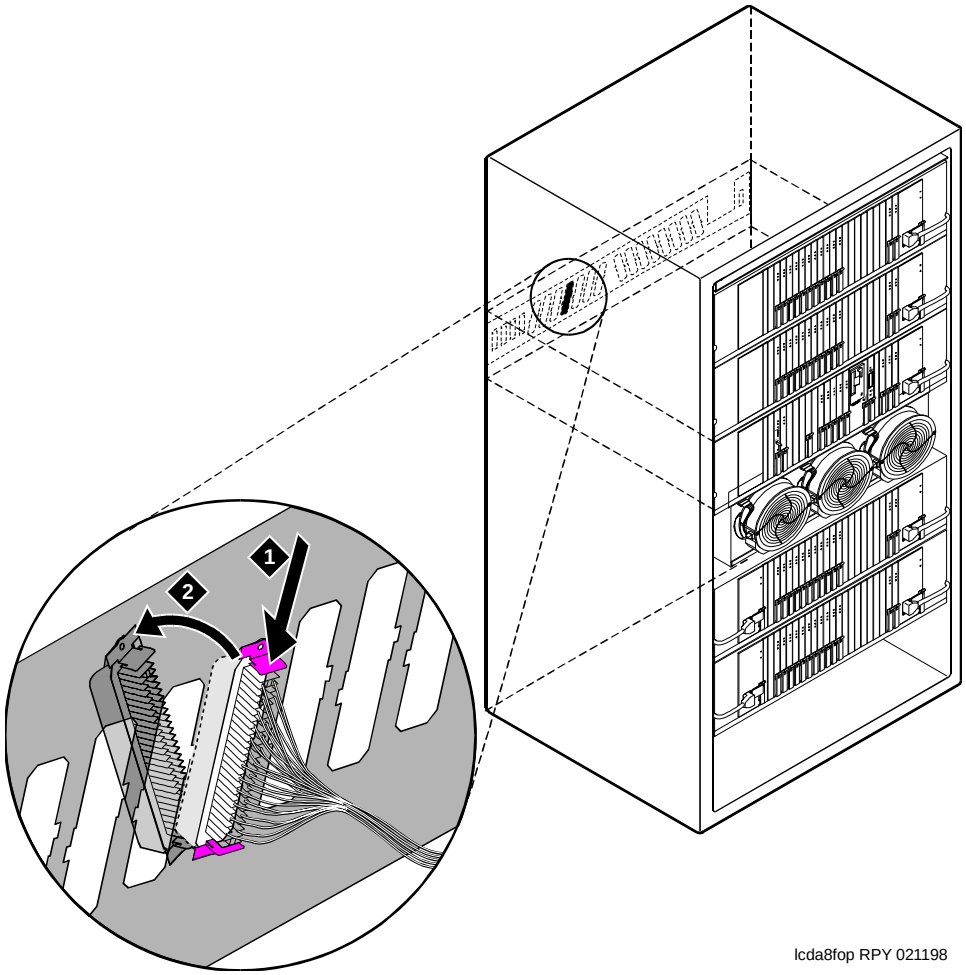


Figure Notes:

[1] Press tab down.

[2] Pull connector forward.

Secure the I/O cable connector

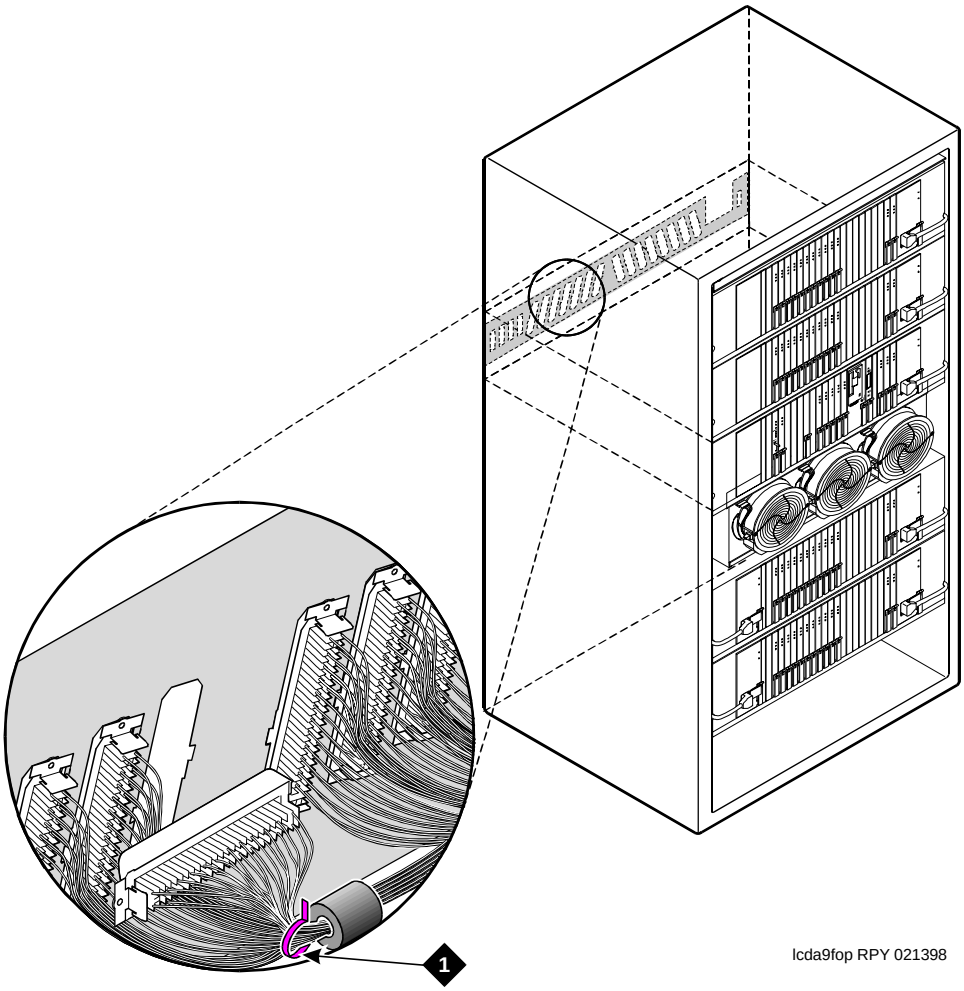
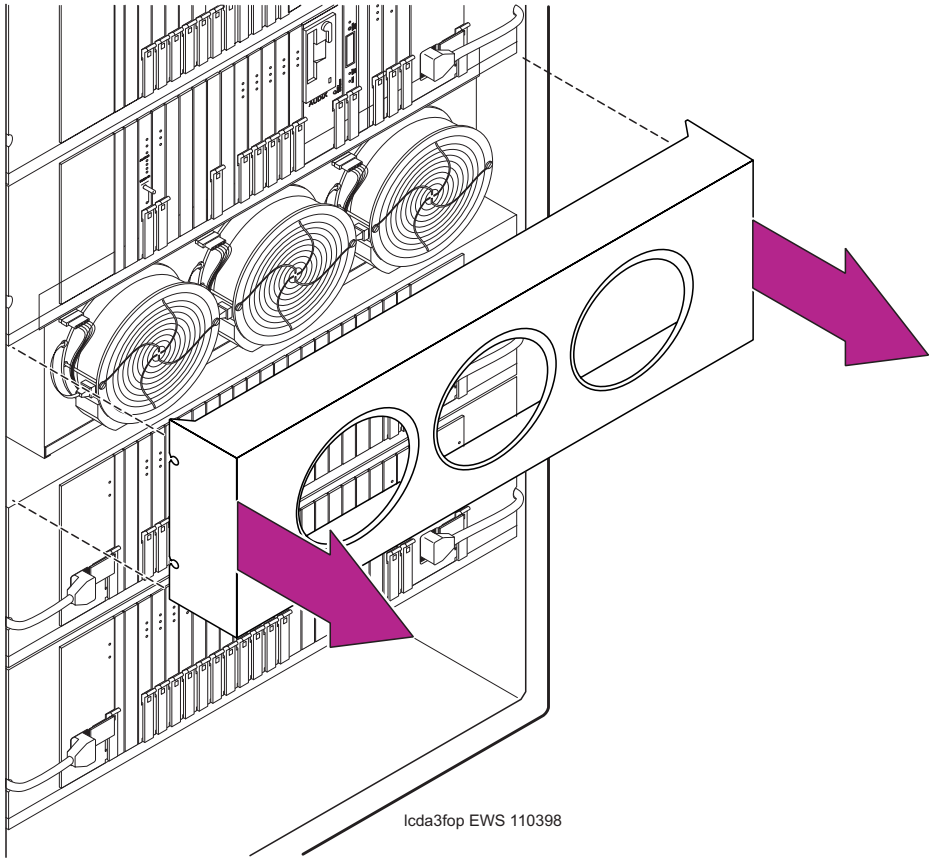


Figure Notes:

[1] Press tab down.

Remove the fan cover



Install the Pass-Thru Kit

Begin

Return to Task List

1. Snap the beige SC-SC fiber optic adapter onto the pass-thru tool. See Fiber optic adapter and pass-thru tool.

   Use the beige adapter even if single-mode fiber is being installed. The beige adapter is better suited for cable routing in the next steps.

   If single-mode fiber is being installed, the beige adapter will be replaced with a blue adapter later.

2. Slide the pass-thru tool to the rear of the cabinet. See Insert the pass-thru tool.
3. Slide the tool to the rear of the cabinet.

CAUTION:
Avoid bending fiber optic cables to a radius smaller than 1.5 inches (3.8 cm), to prevent mechanical stress on the cables.

CAUTION:
During the actual installation of fiber optic components, use either all beige or all blue adapters. Beige denotes multimode fiber and blue denotes single-mode fiber. Do not mix beige with blue.

4. Attach the supplied fiber optic cable to the adapter.

5 Pull the tool (with adapter and cable attached) out through the front of the cabinet. See Fiber Optic Cable and Adapter.

6 From the rear, route the fiber optic cable through the opening vacated by the I/O cable connector.

7 If necessary, remove the beige fiber adapter from the tool and plug the fiber optic cable into the SC-SC (single-mode) or SC-ST (multimode) adapter. See Bracket Attachments.

8 From the front of the I/O connector adapter bracket (with fiber cable), snap the adapter into the supplied I/O connector adapter bracket.

9 Snap the I/O connector adapter bracket into the I/O connector opening.

10 Attach the outside fiber plant to the I/O connector on the rear of the cabinet.

11 Wrap the cable disconnect label around the fiber optic cable. See Cable disconnect label.

Avoid bending fiber optic cables to a radius smaller than 1.5 inches (3.8 cm), to prevent mechanical stress on the cables. Plan the use of cable ties to avoid crimping the cable or creating a fixed stress point where, at a later time, movement of the cable causes it to exceed the minimum bend radius.

12 Close the rear door.

CAUTION:
Be careful not to crimp the fiber cable when you replace the fan cover.

13 Replace the fan cover. See Replace the fan cover.

14 Connect the fiber cable to the angled connector on the front of the circuit pack. See Connect fiber cable to circuit pack.

Note:
Dress the fiber optic cable straight down the front of the circuit pack. Do not allow the cable to cross in front of another circuit pack.

15 Dress the cable using the supplied cable ties and cable tie mounts. See Dress the cable.

16 If a circuit pack was removed in the previous procedure to access 2 open slots, replace the circuit pack into its original slot.

17 Close the front door.

18 Discard the pass-thru tool.

Return to Task List

Fiber optic adapter and pass-thru tool

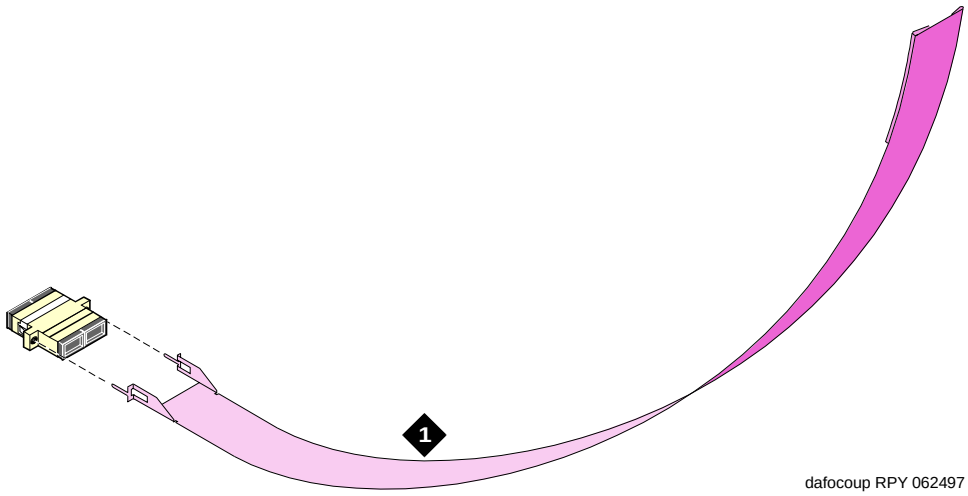
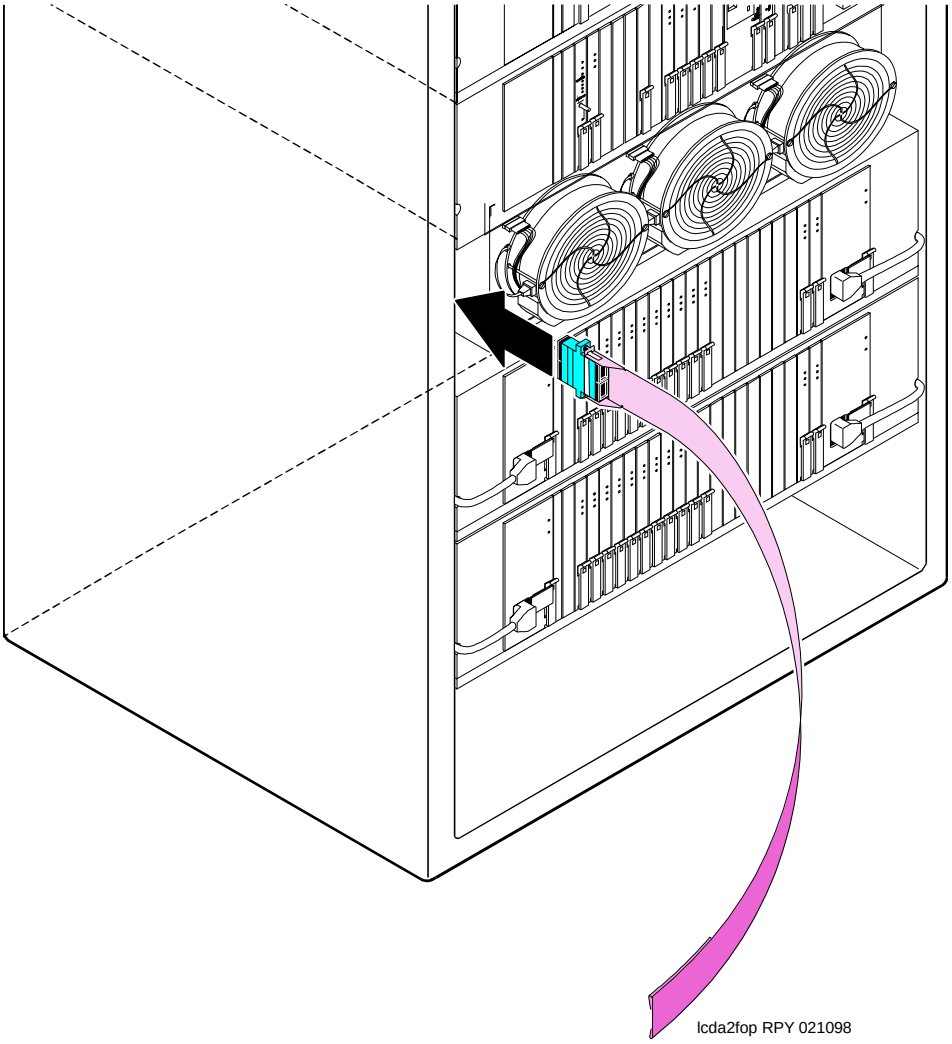


Figure Notes:

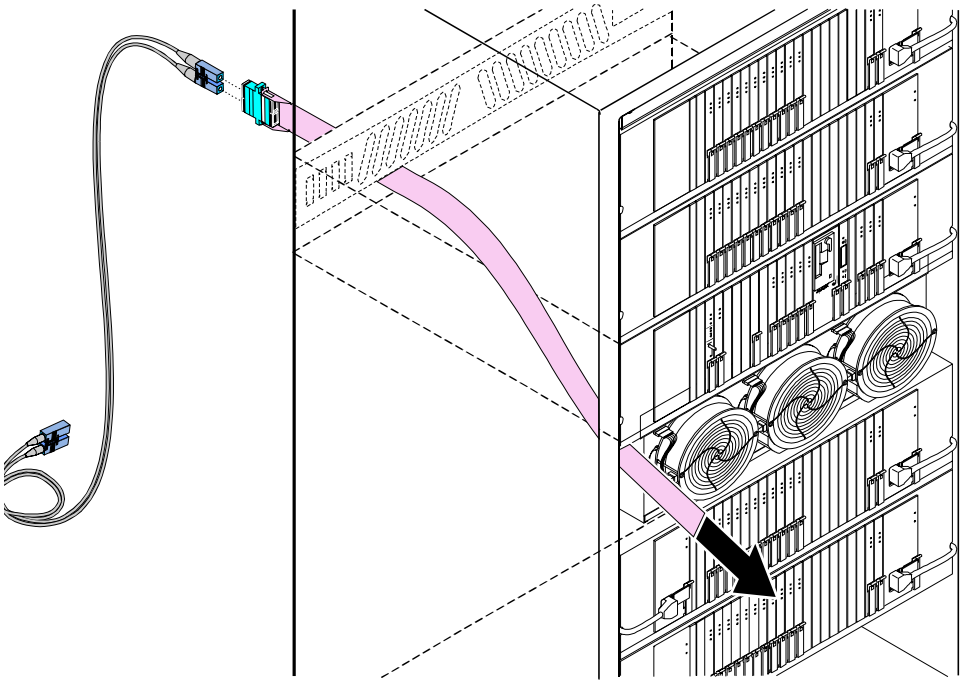
[1] Pass-thru Tool

[2] Beige SC-SC Fiber Optic Adapter

Insert the pass-thru tool

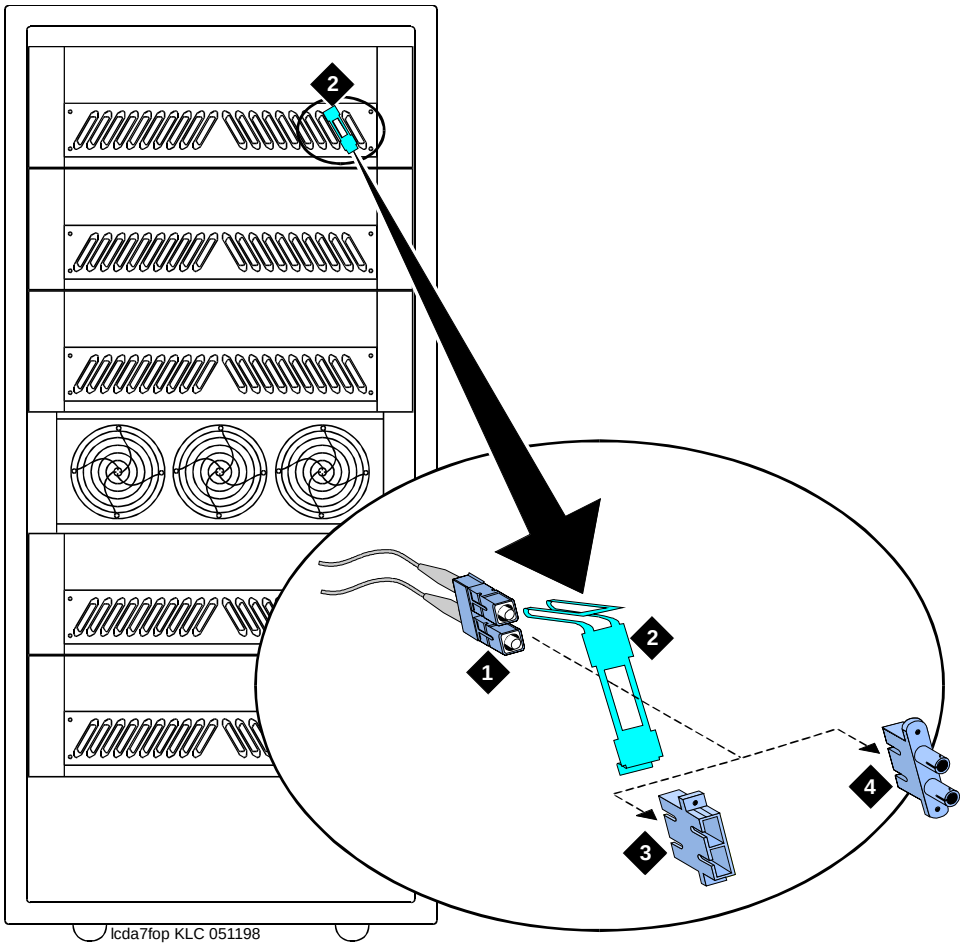


Fiber Optic Cable and Adapter



lcda6fop RPY 02169

Bracket Attachments



lcda7fop KLC 051198

Figure Notes:

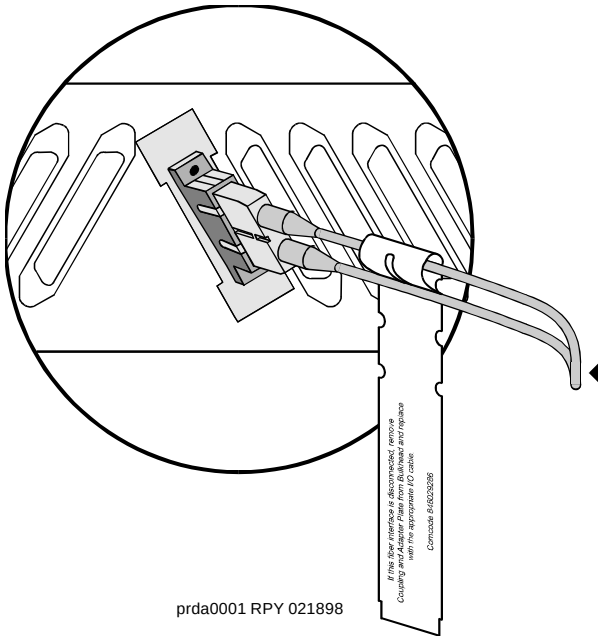
[1] Fiber cable

[2] I/O connector adapter bracket

[3] SC-SC adapter

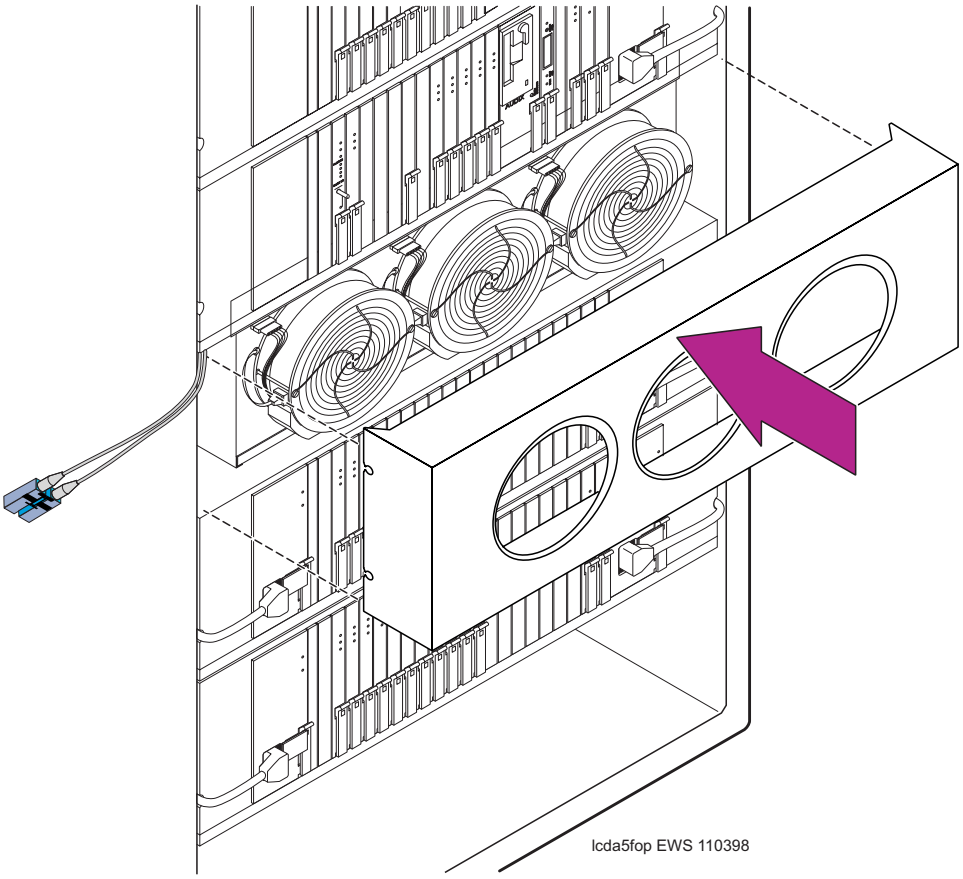
[4] SC-ST adapter

Cable disconnect label

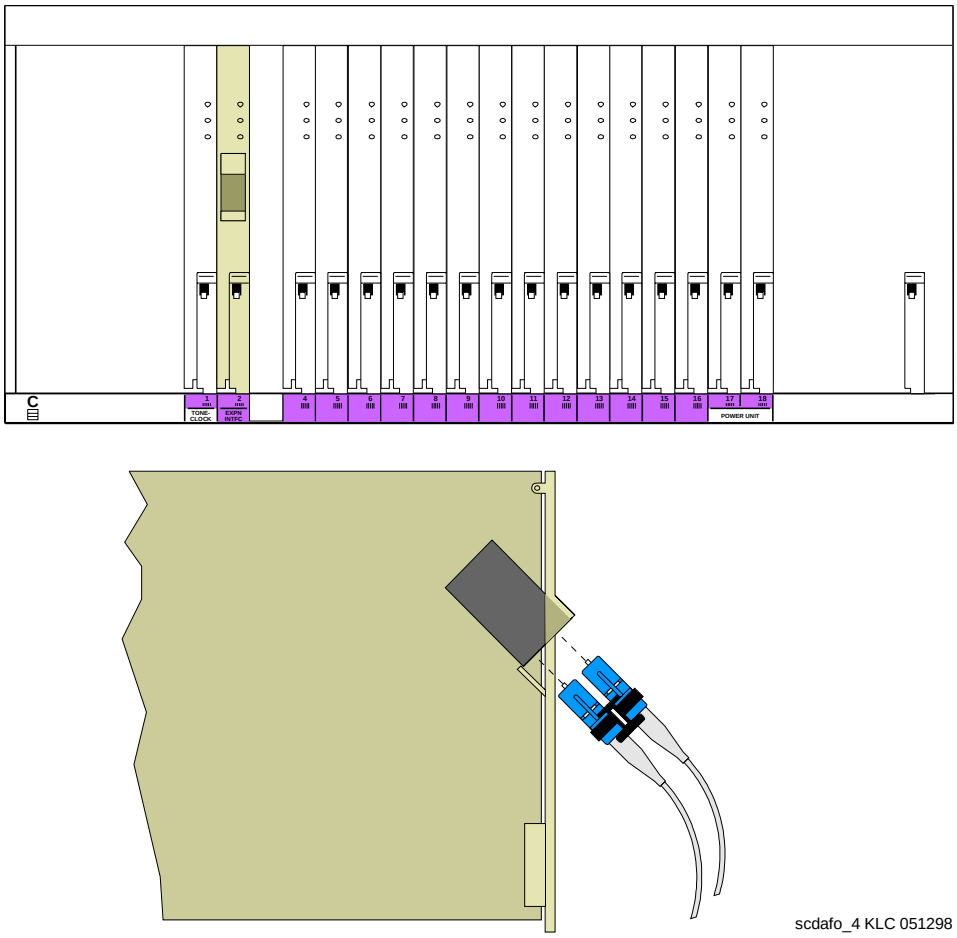

If this fiber interface is disconnected, remove
Coupling and fiber cable from adapter and replace
with the appropriate I/O cable.
Comcode 846003286

prda0001 RPY 021898

Replace the fan cover

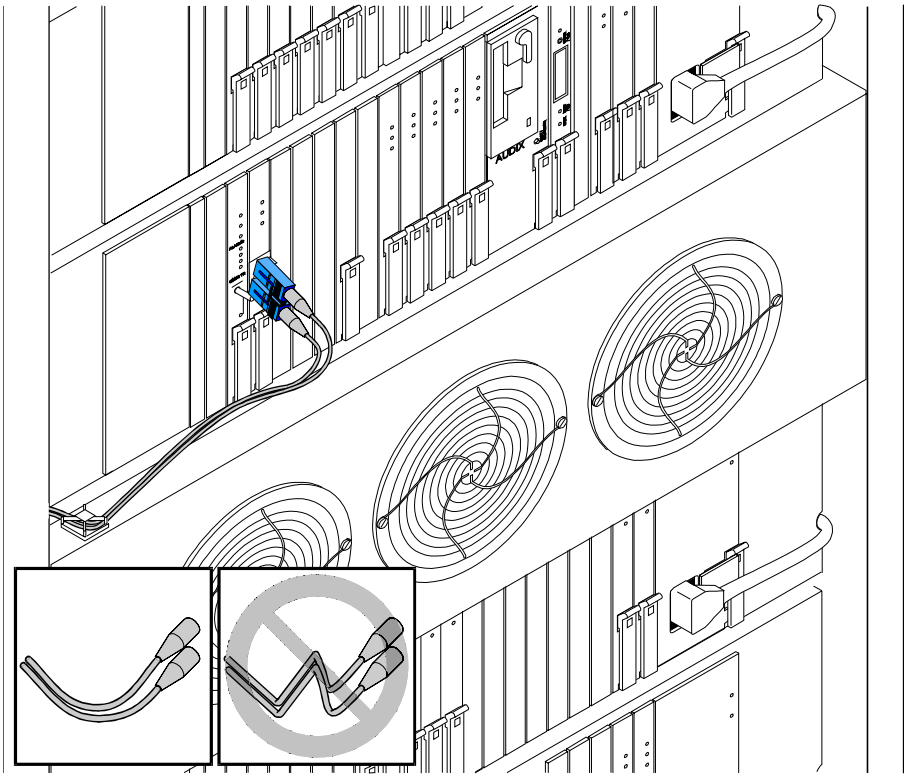


Connect fiber cable to circuit pack



scdafo_4 KLC 051298

Dress the cable



lcda4fop RPY 021398

Test the Installation

Begin

Return to Task List

1. Log into the management terminal.
2. Administer the system by referring to Administering Fiber Optic Cables.
3. Type **list configuration all** and press **Enter** to determine if the new circuit pack appears in the correct slot and that there are no circuit pack conflicts.

Return to Task List

Administering Fiber Optic Cables

Note:
You administer Fiber Optic Cables only on an Avaya Media Gateway r in a Multicarrier Cabinet (MCC1).

When a fiber optic cable is properly labeled, it is easy to trace the desired circuit by looking at the labels on the cross-connect, the cable itself, and the individual fibers in the cable.

Refer to

- Fiber Link Administration Form
- Administration commands
- PN reliability configurations
- Task List: Administration Details

Fiber Link Administration Form

This form administers fiber links, each of which is identified by a fiber number.

Port networks (PNs) are connected via direct fiber link connections or through a center stage switch (CSS) to provide the interconnection of port networks required for voice/data information transfer. The CSS is composed of "switch nodes" that can be interconnected in one or two levels to provide Port Network Connectivity (PNC). The CSS provides circuit-switched connectivity for voice and data communications as well as packet-switched connectivity. Fiber link administration permits an administration of translation data associated with a switch connection (such as optical fiber, metallic cable, or DS1CONV circuit packs and DS1 facility links between two endpoints). The two fiber endpoints can be:

- An expansion interface (EI) circuit pack
- A switch node interface (SNI) circuit pack

Note:
Only one administrative terminal can administer fiber links at a time; others can display fiber link information.

Administration commands

Use the following commands to administer the Fiber Link Administration form.

Action	Object	Qualifier
add	fiber-link	link number or [’next’]
change	fiber-link	link number
display	fiber-link	link number
list	fiber-link	link number
remove	fiber-link	link number

PN reliability configurations

PNCs have three different reliability configurations (one for each system reliability configuration) as follows:

System Configuration	PNC
Standard Reliability	Simplex Fibers
High Reliability	Simplex Fibers to Expansion Port Networks and Duplicated Fibers between Processor Port Networks (PPN) and Switch Nodes
Critical Reliability	Duplicated Fibers

Simplex PNC

For Simplex PNC, PNC Duplication is disabled with a license file and Duplication is disabled on the Duplication-Related System-Parameters form.

Task List: Administration Details

For details of administration, select the topics that relate to your installation:

- Administering PNC Duplication
- Administering Fiber Links
- Duplicated Fiber Link Administration
- DS1C Converter Complex Administration for TN574 Circuit Packs
- Duplicated DS1C Converter Complex Administration for TN574 Circuit Packs
- DS1 Converter Complex Administration for T1 TN1654 Circuit Packs
- Dupicated DS1 Converter Complex Administration for T1 TN1654 Circuit Packs
- DS1 Converter Complex Administration for E1 TN1654 Circuit Packs
- Duplicated DS1 Converter Complex Administration for E1 TN1654 Circuit Packs

Administering PNC Duplication

Return to Task List

The license file enables PNC Duplication. If PNC Duplication is enabled on the System-Parameters Customer-Options form, the following administration forms change:

- Cabinet form — Additional fields appear to allow administration of switch nodes to A-PNC and B-PNC sides of the CSS. The B-PNC is the duplicated hardware for the A-PNC. Either the A-PNC or the B-PNC can provide full customized service. B-PNC cannot be used in a simplex PNC configuration. Pairing of switch nodes is also defined here.
- Fiber Link form — Additional fields appear to allow administration of fiber links on the B-PNC side of the CSS. If an endpoint on the A-PNC side is administered as an SNI, its corresponding endpoint on the B-PNC side is

determined (if switch nodes are paired in the cabinet form prior to this administration) and displayed. However, administration of the duplicate B-PNC link is not enforced until duplication is in full operation.

- Duplication-Related System-Parameters form — An additional field appears to enable operation of PNC duplication.

Return to Task List

Administering Fiber Links

Return to Task List

Additional fields appear on the Fiber Link Administration form to allow administration of fiber links on the B-PNC side of the CSS. If an endpoint on the A-PNC side is administered as an SNI, its corresponding endpoint on the B-PNC side is determined (if switch nodes are paired in the cabinet form prior to this administration) and displayed. However, administration of the duplicate B-PNC link is not enforced until duplication is in full operation.

The following fields appear for basic fiber link administration:

- **Fiber Link #** — Display-only field. From the command line, enter a 1- to 3-digit number to uniquely identify a switch connection in the system and its duplicate if appropriate.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of an SNI or EI board that is the first endpoint of the fiber link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-1.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of an SNI or EI board that is the second endpoint of the fiber link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-2.
- **Is one endpoint remoted via a DS1 Converter Complex?** — Enter **y** to specify that a DS1 Converter complex is used to remote one endpoint. If a **y** is entered, A-PNC DS1 Converter circuit pack Location must be administered on Page 1. A-PNC DS1 Converter circuit pack Type displays. A-PNC DS1 Converter (DS1CONV) Attributes must be administered on Page 2 of this form.

Fiber Link Administration form

```
                                                              Page 1 of 1
                          FIBER LINK ADMINISTRATION
Fiber Link #: 1

Is one endpoint remoted via a DS1 Converter Complex? ___
             ENDPOINT-1                                  ENDPOINT-2
              (A-PNC)                                     (A-PNC)
           Board Location: _____                   Board Location: _____
               Board Type: xxx                         Board Type: xxx
```

Return to Task List

Duplicated Fiber Link Administration

Return to Task List

Fiber Link Administration form (page 1 of 3) shows the fields available when duplication is enabled.

The following fields appear when **Administration of PNC Duplication** is enabled on the System-Parameters Customer-Options form:

- **Fiber Link #** — Display-only field. From the command line, enter a 1- to 3-digit number to uniquely identify a switch connection in the system and its duplicate if appropriate.
- **Is one endpoint remoted via DS1 Converter Complex?** — Enter **yes** to specify that a *DS*1 converter complex is used to remote one endpoint. If **yes** is entered, A-PNC and B-PNC DS1 Converter (DS1CONV) Attributes must be administered on Pages 2 and 3 (respectively) of the form.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of a circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-1. The circuit pack type in Endpoint-1 (A-PNC) and Endpoint-1 (B-PNC) must be the same.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the first endpoint of the duplicate fiber link. Endpoint-1's duplicate along with Endpoint-2's duplicate make up the duplicate fiber link called the B-PNC link.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack in Endpoint-1. The circuit pack type in Endpoint-1 (A-PNC) and Endpoint-1 (B-PNC) must be the same. This field is updated via the Change Circuit-packs command.
- **Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of a circuit pack in the second endpoint of the duplicate fiber link. Endpoint-2's duplicate along with Endpoint-1's duplicate make up the duplicate fiber link called the B-PNC link.
- **Board Type** — Display-only field showing the type of circuit pack in Endpoint-2. The circuit pack type in Endpoint-2 (A-PNC) and Endpoint-2 (B-PNC) must be the same.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of DS1 Converter circuit pack in the second endpoint of the duplicate fiber link. Endpoint-2's duplicate along with Endpoint-1's duplicate make up the duplicate fiber link called the B-PNC link.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack in Endpoint-2. The circuit pack type in Endpoint-2 (A-PNC) and Endpoint-2 (B-PNC) must be the same. This field is updated via the Change Circuit-packs command.

Fiber Link Administration form (page 1 of 3)

```
add fiber-link next                                          Page 1 of 3
                        FIBER LINK ADMINISTRATION

Fiber Link #: 1
Is one endpoint remoted via DS1 Converter Complex? yes

   ENDPOINT-1                              ENDPOINT-2
   (A-PNC)                                 (A-PNC)
Board Location: 01E01                   Board Location: 02A01
Board Type: ei                          Board Type: ei
DS1CONV Board Location: 01B01           DS1CONV Board Location: 02B01
DS1CONV Board Type: TN574               DS1CONV Board Type: TN574


   ENDPOINT-1                              ENDPOINT-2
   (B-PNC)                                 (B-PNC)
Board Location: 01D01                   Board Location: 02A02
Board Type: ei                          Board Type: ei
DS1CONV Board Location: 01C01           DS1CONV Board Location: 02C01
DS1CONV Board Type: TN574               DS1CONV Board Type: TN574
```

Return to Task List

DS1C Converter Complex Administration for TN574 Circuit Packs

Return to Task List

Fiber Link Administration form for TN574 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3) shows the fields available to administer the TN574 circuit pack.

The following DS1 Converter Complex fields appear on Page 2 when the **Is one endpoint remoted via a DS1 Converter Complex?** field is **y**.

Note:
When you administer DS1 Converter TN1654 circuit packs, different fields display.

- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter circuit pack connected to the first endpoint of the fiber link. This is entered on Page 1 and displays on Page 2.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack for the first endpoint.
- **DS1CONV Board Location** — Enter the cabinet, carrier, and slot that identifies the physical location of the converter circuit pack connected to the second endpoint of the fiber link.
- **DS1CONV Board Type** — Display-only field showing the type of DS1 Converter circuit pack for the second endpoint. This field is updated via the Change Circuit-packs command.
- **Facility Installed** — Enter **yes** in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is physically installed. At least facility A must be installed within the converter complex. Default is **yes** for Facility A.
- **Passes Far-end Clock** — Enter **yes** in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is suitable to be used as a clock source. If the DS1 signal does not come directly from the far end

converter circuit pack or the network (such as when the signal is converted from digital to analog and then back to digital), enter **no**. Default is **yes** for Facility A.

This field determines whether the DS1 converter circuit pack can use receive DS1 signal timing to time the transmit fiber signal. This is necessary for passing timing from a master PN to a slave PN across a Converter Complex.

- **Digital Data Compatible** — Enter **yes** (default) in the B, C, and D columns under the DS1 Converter Facilities heading to indicate that this DS1 facility is suitable for transmission of digital data. At least Facility A must be suitable for transmission of digital data. If Customer Premises Equipment that alters digital data exists on this facility (such as with a channel expansion multiplexer), enter **no**.
- **Line Coding** — Enter the line coding format, **ami-zcs** (default), or **ami-basic**, **b8zs**, or **hdb3** in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

  When ami-zcs line coding is used, all-zero bytes are prevented from being transmitted on the DS1 facility because a 1 is arbitrarily written into the second position of each byte. Thus, if no measures are taken to prevent it, ami-zcs line coding results in data corruption. The DS1CONV circuit pack protects the packet facility (one of up to four facilities dynamically allocated by the DS1CONV circuit pack) from corruption through a special escape mechanism.

  When b8zs line coding is used, it maintains DS1 facility's ones-density requirements by encoding a zero data byte into a specific unique pattern of bipolar violations on the DS1 line. The opposite end recognizes this pattern and replaces it with a zero data byte when the data is recovered at the receiving end.

Note:
Note that although the esf framing mode and b8zs line coding are the preferable modes of operation, you should confirm that the DS1 facilities support them before selecting this line coding.

- **Framing Mode** — Enter the framing format, **esf** (default) or **d4**, in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility.

Note:
The D4 format is supported by the Converter circuit packs, but because of problems inherent with this format (specifically, inability to frame on a bit stream that contains data that emulates the D4 framing pattern), its use is discouraged.

- **DS1CONV-1 Line Compensation** — Enter the line compensation (**1** to **5**) in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility connected to ENDPOINT-1 (see Distance to DSX-1 Interface (feet)).

  The DS1 line signal is pre-equalized at the transmitter so that DS1 line pulses are the correct amplitude and shape when they reach the Network Interface. The amount of equalization necessary is determined by the distance to the Network Interface (when the endpoint supplies a DSX-1 interface) and also by the type of wiring used to connect to the Network Interface. The types of wiring allowed are 22-gauge ABAM (shielded twisted pair) cable, 24-gauge Premises Distribution System (PDS) wiring, and 26-gauge PDS wiring.

Note:
The line equalization setting defaults to 2 and remains in effect until changed by administration. Because incorrect equalizer settings cause a potentially

higher error rate on the DS1 facility, it is necessary to provide the correct settings based on the distance to the Network interface.

If it is a TN574 circuit pack, the default for all facilities is **1**.

- **DS1CONV-2 Line Compensation** — Enter the line compensation (**1** to **5**) in the A, B, C, and D columns under the DS1 Converter Facilities heading for each DS1 facility connected to ENDPOINT-2 (see Distance to DSX-1 Interface (feet). The DS1 line signal is pre-equalized at the transmitter so that DS1 line pulses are the correct amplitude and shape when they reach the Network Interface. The amount of equalization necessary is determined by the distance to the Network Interface (when the endpoint supplies a DSX-1 interface) and also by the type of wiring used to connect to the Network Interface. The types of wiring allowed are 22-gauge ABAM (shielded twisted pair) cable, 24-gauge Premises Distribution System (PDS) wiring, and 26-gauge PDS wiring.
- **Facility A Circuit ID** — Displays when the value in **Facility Installed** for Facility A is **yes**. Enter up to 40 characters to identify the cabinet, carrier, and slot of the DS1 Converter circuit pack's physical location.

  Similarly, Facility B Circuit ID, Facility C Circuit ID, and Facility D Circuit ID fields display for each of the DS1 Converter Facilities when **yes** is entered in the corresponding Facility Installed field.

Fiber Link Administration form for TN574 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3)

```
add fiber-link next                                          Page 2 of 3

                        FIBER LINK ADMINISTRATION
                  A-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01B01              DS1CONV Board Location: 02B01
DS1CONV Board Type: TN574                  DS1CONV Board Type: TN574

                          DS1 CONVERTER FACILITIES

                              A         B         C         D
          Facility Installed? yes       no        no        no
        Passes Far-end Clock? yes       yes       yes       yes
     Digital Data Compatible? yes       yes       yes       yes
                Line Coding:  ami-zcs   ami-zcs   ami-zcs   ami-zcs
              Framing Mode:   esf       esf       esf       esf
DS1CONV-1 Line Compensation:  1         1         1         1
DS1CONV-2 Line Compensation:  1         1         1         1

Facility A Circuit ID: 09876543
```

Distance to DSX-1 Interface (feet)		
Equalizer Setting	**22 AWG ABAM & 24 AWG PDS**	**26 AWG PDS**
1	1 to 133	0 to 90
2	133 to 266	90 to 180

Distance to DSX-1 Interface (feet)		
Equalizer Setting	**22 AWG ABAM & 24 AWG PDS**	**26 AWG PDS**
3	266 to 399	180 to 270
4	399 to 533	270 to 360
5	533 to 655	360 to 450

Return to Task List

Duplicated DS1C Converter Complex Administration for TN574 Circuit Packs

Return to Task List

Fiber Link Administration form for TN574 Circuit Pack (Duplicated DS1 Converter Complex Administration) (page 3 of 3) allows you to admininster the DS1 converter.

Page 3 appears when the **Is one endpoint remoted via a DS1 Converter Complex?** field is **yes** and duplication is enabled.

Note:
When you administer DS1 Converter TN1654 circuit packs, different fields display.

For field definitions of the fields displayed on page 3 of the Fiber Link Administration form, see DS1C Converter Complex Administration for TN574 Circuit Packs.

Fiber Link Administration form for TN574 Circuit Pack (Duplicated DS1 Converter Complex Administration) (page 3 of 3)

```
add fiber-link next                                        Page 3 of 3

                      FIBER LINK ADMINISTRATION
                 B-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01C01              DS1CONV Board Location: 02C01
DS1CONV Board Type: TN574                  DS1CONV Board Type: TN574

                         DS1 CONVERTER FACILITIES

                              A         B         C         D
          Facility Installed? yes       no        no        no
       Passes Far-end Clock? yes       yes       yes       yes
    Digital Data Compatible? yes       yes       yes       yes
                Line Coding: ami-zcs   ami-zcs   ami-zcs   ami-zcs
               Framing Mode: esf       esf       esf       esf
DS1CONV-1 Line Compensation: 1         1         1         1
DS1CONV-2 Line Compensation: 1         1         1         1

Facility B Circuit ID: 01112343
```

Return to Task List

DS1 Converter Complex Administration for T1 TN1654 Circuit Packs

Return to Task List

Fiber Link Administration form for T1 TN1654 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3) shows the fields available to administer the TN1654 circuit pack.

The following unique fields display when administering a T1 TN1654 DS1 Converter.

- **Bit Rate** — Displays when the DS1 Converter circuit pack is TN1654. Enter either **1.544** for domestic T1 operation or **2.048** for international E1 operation.

Note:
Since one bit rate applies for all facilities within the same DS1 Converter complex, the **Bit Rate** field displays only under Facility A.

- **Facility Startup Idle Code**— Displays when the DS1 Converter circuit pack is TN1654. Enter 8 digits, each digit must be **0** or **1**. The second digit must be **1**. Default is **11101000**. You can administer this field on a per circuit pack basis. This is the idle code used when a TN1654 first establishes a link on a T1/E1 facility. The initial idle code used by the TN1654 is overwritten by the center stage switch to an “all ones” pattern once framing is established on that T1/E1 facility.
- **Framing Mode** — For TN1654 with 1.544 Mbps Bit Rate, this is a display-only field.

Fiber Link Administration form for T1 TN1654 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3)

```
add fiber-link next                                          Page 2 of 3

                        FIBER LINK ADMINISTRATION
                  A-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01B01               DS1CONV Board Location: 02B01
DS1CONV Board Type: TN1654                  DS1CONV Board Type: TN1654

                           DS1 CONVERTER FACILITIES

                                A         B         C         D
         Facility Installed?  yes       yes       no        no
                   Bit Rate:  1.544
 Facility Startup Idle Code:  11101000
                Line Coding:  ami-zcs   ami-zcs   ami-zcs   ami-zcs
              Framing Mode:
DS1CONV-1 Line Compensation:  1         1         1         1
DS1CONV-2 Line Compensation:  1         1         1         1

Facility A Circuit ID: 09876543
Facility B Circuit ID: 234567889
```

Return to Task List

Dupicated DS1 Converter Complex Administration for T1 TN1654 Circuit Packs

Return to Task List

Fiber Link Administration form for E1 TN1654 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3) allows you to admininster the DS1 converter.

The following unique fields display when administering a TN1654 DS1 Converter.

- **Bit Rate** — A display-only field for TN1654 entered on page 3 of the form. **1.544** indicates domestic (USA) T1 operation and **2.048** indicates international E1 operation. See at DS1C Converter Complex Administration for TN574 Circuit Packs for more information.

Fiber Link Administration form for E1 TN1654 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3)

```
add fiber-link next                                          Page 2 of 3

                        FIBER LINK ADMINISTRATION
                  A-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01B01              DS1CONV Board Location: 02B01
DS1CONV Board Type: TN1654                 DS1CONV Board Type: TN1654

                          DS1 CONVERTER FACILITIES

                               A        B        C        D
          Facility Installed?  yes      yes      yes      no
                    Bit Rate:  2.048
 Facility Startup Idle Code:   11101000
                  Line Coding: hdb3     hdb3     hdb3     hdb3
                          CRC? yes
            Line Termination:


Facility A Circuit ID: 09876543
Facility B Circuit ID: 234567889
Facility C Circuit ID: 434566335
```

Return to Task List

DS1 Converter Complex Administration for E1 TN1654 Circuit Packs

Return to Task List

Fiber Link Administration form for E1 TN1654 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3) allows you to admininster the DS1 converter.

The following unique fields display when administering a E1 TN1654 DS1 Converter.

- **Bit Rate** — Displays when the DS1 Converter circuit pack is TN1654. Enter either **1.544** for domestic (USA) T1 operation or **2.048** for international E1 operation.

Note:

Since one bit rate applies for all facilities within the same DS1 Converter complex, **Bit Rate** displays only under Facility A. To activate the desired Bit Rate, the toggle switch on the circuit pack must be set and it must correspond to the Bit Rate.

- **Idle Code MSB(1) ... LSB(8)** — Displays when the DS1 Converter circuit pack is TN1654. Enter 8 digits, each digit must be **0** or **1**. The second digit must be **1**. Default is **11101000**. You can administer this field on a per circuit pack basis.
- **CRC** — Displays when the DS1 Converter circuit pack is TN1654 and the Bit Rate is 2.048 Mbps. Enter **yes** to receive a “yellow 2” alarm for E1 operation. Default is **no**. You can administer this field on a per circuit pack basis.
- **Line Termination** — A display-only field for DS1 Converter circuit packs that are TN1654 and have a Bit Rate of 2.048 Mbps. It identifies facility connections as CEPT 75 ohm coaxial or 120 ohm CEPT twisted pair.

Fiber Link Administration form for E1 TN1654 Circuit Pack (DS1 Converter Complex Administration) (page 2 of 3)

```
add fiber-link next                                        Page 2 of 3

                        FIBER LINK ADMINISTRATION
                  A-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01B01                DS1CONV Board Location: 02B01
DS1CONV Board Type: TN1654                   DS1CONV Board Type: TN1654

                           DS1 CONVERTER FACILITIES

                                A         B         C         D
          Facility Installed?   yes       yes       yes       no
                     Bit Rate:  2.048
  Facility Startup Idle Code:  11101000
                 Line Coding:  hdb3      hdb3      hdb3      hdb3
                         CRC?  yes
            Line Termination:


Facility A Circuit ID: 09876543
Facility B Circuit ID: 234567889
Facility C Circuit ID: 434566335
```

Return to Task List

Duplicated DS1 Converter Complex Administration for E1 TN1654 Circuit Packs

Return to Task List

Fiber Link Administration form for B-PNC DS1 Converter (DS1CONV) Attributes allows you to admininster the DS1 converter.

The following unique fields display when administering a E1 TN1654 DS1 Converter.

- **Bit Rate** — Displays when the DS1 Converter circuit pack is TN1654. Enter either **1.544** for domestic (USA) T1 operation or **2.048** for international E1 operation.

Note:
Since one bit rate applies for all facilities within the same DS1 Converter complex, **Bit Rate** displays only under Facility A. To activate the desired Bit Rate, the toggle switch on the circuit pack must be set and it must correspond to the Bit Rate.

- **Idle Code MSB(1) ... LSB(8)** — Displays when the DS1 Converter circuit pack is TN1654. Enter 8 digits, each digit must be **0** or **1**. The second digit must be **1**. Default is **11101000**. You can administer this field on a per circuit pack basis.

- **CRC** — Displays when the DS1 Converter circuit pack is TN1654 and the Bit Rate is 2.048 Mbps. Enter **yes** to receive a “yellow 2” alarm for E1 operation. Default is **no**. You can administer this field on a per circuit pack basis.
- **Line Termination** — A display-only field for DS1 Converter circuit packs that are TN1654 and have a Bit Rate of 2.048 Mbps. It identifies facility connections as CEPT 75 ohm coaxial or 120 ohm CEPT twisted pair.

Fiber Link Administration form for B-PNC DS1 Converter (DS1CONV) Attributes

```
add fiber-link next                                        Page 3 of 3

                        FIBER LINK ADMINISTRATION
                  B-PNC DS1 CONVERTER (DS1CONV) ATTRIBUTES

DS1CONV Board Location: 01C01                DS1CONV Board Location: 02C01
DS1CONV Board Type: TN1654                   DS1CONV Board Type: TN1654

                          DS1 CONVERTER FACILITIES

                               A        B        C        D
           Facility Installed? yes      yes      yes      no
                     Bit Rate: 2.048
 Facility Startup Idle Code: 11101000
                   Line Coding: hdb3     hdb3     hdb3     hdb3
                          CRC? yes
             Line Termination:


Facility A Circuit ID: 0AABB01
Facility B Circuit ID: 0CCDD02
Facility C Circuit ID: 0EEFF03
```

Return to Task List

Connector and Cable Diagrams (Pinout Charts)

These pinout charts provide wire color and connector pin numbers for

- Circuit Pack and Auxiliary Equipment Leads (Pinout Charts), includes 2- and 4-wire analog and digital lines, 8, 16, and 24 ports; hybrid line; MET line; AUX and CO trunk.
- Circuit Pack and Auxiliary Equipment Leads (Pinout Charts), includes 3-wire CO trunk, DID/DIOD trunk, tie and DS1 tie trunk, 2- and 4-wire ISDN-BRI lines, packet data line, and 4-port DIOD.
- Lead and Color Designations
- TN2185B ISDN-BRI 4-wire S Interface
- TN2198 ISDN-BRI 2-wire U Interface
- TN793B 24-Port Analog Line circuit pack
- DS1 Interface Cable H600-307

Circuit Pack and Auxiliary Equipment Leads (Pinout Charts)

Begin

Color	Con-nector Pin Nos	Analog Line (8)	Digital Line & Analog Line (16) 2-wire	Data Line & Digital Line 4-wire	Digital Line & Analog Line (24) 2-wire	Hybrid Line	AUX Trunk	CO Trunk
W-BL	26	T1	T1		T1	V1T1	T1	T1
BL-W	01	R1	R1		R1	V1R1	R1	R1
W-O	27		T2	TXT1	T2	CT1	SZ1	
O-W	02		R2	TXR1	R2	CR1	SZ11	
W-G	28		T3	PXT1	T3	P-1	S1	
G-W	03		R3	PXR1	R3	P+1	S11	
W-BR	29	T2	T4		T4	V1T2	T2	T2
BR-W	04	R2	R4		R4	V1R2	R2	R2
W-S	30			TXT2	T5	CT2	SZ2	
S-W	05			TXR2	R5	CR2	SZ12	
R-BL	31			PXT2	T6	P-2	S2	
BL-R	06			PXR2	R6	P+2	S12	
R-O	32	T3			T7	V1T3	T3	T3
O-R	07	R3			R7	V1R3	R3	R3
R-G	33			TXT3	T8	CT3	SZ3	
G-R	08			TXR3	R8	CR3	SZ13	
R-BR	34		T5	PXT3	T9	P-3	S3	
BR-R	09		R5	PXR3	R9	P+3	S13	
R-S	35	T4	T6		T10	V1T4	T4	T4

Color	Con-nector Pin Nos	Analog Line (8)	Digital Line & Analog Line (16) 2-wire	Data Line & Digital Line 4-wire	Digital Line & Analog Line (24) 2-wire	Hybrid Line	AUX Trunk	CO Trunk
S-R	10	R4	R6		R10	V1R4	R4	R4
BK-BL	36		T7	TXT4	T11	CT4	SZ4	
BL-BK	11		R7	TXR4	R11	CR4	SZ14	
BK-O	37		T8	PXT4	T12	P-4	S4	
O-BK	12		R8	PXR4	R12	P+4	S14	
BK-G	38	T5	T9		T13	V1T5		T5
G-BK	13	R5	R9		R13	V1R5		R5
BK-BR	39		T10	TXT5	T14	CT4		
BR-BK	14		R10	TXR5	R14	CR4		
BK-S	40		T11	PXT5	T15	P-5		
S-BK	15		R11	PXR5	R15	P+5		
Y-BL	41	T6	T12		T16	V1T6		T6
BL-Y	16	R6	R12		R16	V1R6		R6
Y-O	42			TXT6	T17	CT6		
O-Y	17			TXR6	R17	CR6		
Y-G	43			PXT6	T18	P-6		
G-Y	18			PXR6	R18	P+6		
Y-BR	44	T7			T19	V1T7		T7
BR-Y	19	R7			R19	V1R7		R7
Y-S	45			TXT7	T20	CT7		
S-Y	20			TXR7	R20	CR7		
V-BL	46		T13	PXT7	T21	P-7		
BL-V	21		R13	PXR7	R21	P+7		
V-O	47	T8	T14		T22	V1T8		T8
O-V	22	R8	R14		R22	V1R8		R8
V-G	48		T15	TXT8	T23	CT8		
G-V	23		R15	TXR8	R23	CR8		
V-BR	49		T16	PXT8	T24	P-8		
BR-V	24		R16	PXR8	R24	P+8		
V-S	50							
S-V	25							

The wire colors in this chart apply only to B25A and A25B cables. H600-307 cable colors are not shown.

The following wire colors apply to this chart:

W	White	S	Slate (Grey)
BL	Blue	R	Red
O	Orange	BK	Black
G	Green	Y	Yellow
BR	Brown	V	Violet

The following abbreviations apply for all circuit packs unless otherwise noted:

T,R	PBX transmit voice	T	Tip	(A)	Green
T1,R1	PBX receive voice	R	Ring	(B)	Red
M	PBX transmit signal	S	Sleeve		
E	PBX receive signal		PX	PBX transmit	
TX	Terminal transmit				
LI, LI*	Digital Trunk IN	LO, LO*	Digital Trunk OUT		

Circuit Pack and Auxiliary Equipment Leads (Pinout Charts)

Begin

Color	Con-nector Pin Nos	CO Trunk 3-wire	DID/ DIOD Trunk	Tie Trunk	DS1 Tie Trunk	ISDN BRI Line 4-wire	ISDN BRI Line 2-wire	Packet Data Line	4 Port DIOD
W-BL	26	A1	T1	T1		PXR1	T1	TXT1	T1
BL-W	01	B1	R1	R1		PXT1	R1	TXR1	R1
W-O	27			T11		TXT1	T2	PXT1	
O-W	02			R11		TXR1	R2	PXR1	
W-G	28			E1		PXR2	T3	TXT2	
G-W	03	C1		M1		PXT2	R3	TXR2	
W-BR	29	A2	T2	T2		TXT2	T4	PXT2	T2
BR-W	04	B2	R2	R2		TXR2	R4	PXR2	R2
W-S	30			T12		PXR3	T5	TXT3	
S-W	05			R12		PXT3	R5	TXR3	
R-BL	31			E2		TXT3	T6	PXT3	
BL-R	06	C2		M2		TXR3	R6	PXR3	
R-O	32	A3	T3	T3		PXR4	T7	TXT4	T3
O-R	07	B3	R3	R3		PXT4	R7	TXR4	R3
R-G	33			T13		TXT4	T8	PXT4	
G-R	08			R13		TXR4	R8	PXR4	
R-BR	34			E3		PXR5	T9	TXT5	
BR-R	09	C3		M3		PXT5	R9	TXR5	

Color	Con-nector Pin Nos	CO Trunk 3-wire	DID/ DIOD Trunk	Tie Trunk	DS1 Tie Trunk	ISDN BRI Line 4-wire	ISDN BRI Line 2-wire	Packet Data Line	4 Port DIOD
R-S	35	A4	T4	T4		TXT5	T10	PXT5	T4
S-R	10	B4	R4	R4		TXR5	R10	PXR5	R4
BK-BL	36			T14		PXR6	T11	TXT6	
BL-BK	11			R14		PXT6	R11	TXR6	
BK-O	37			E4		TXT6	T12	PXT6	
O-BK	12			M4		TXR6	R12	PXR6	
BK-G	38		T5			PXR7		TXT7	
G-BK	13		R5			PXT7		TXR7	
BK-BR	39					TXT7		PXT7	
BR-BK	14					TXR7		PXR7	
BK-S	40					PXR8		TXT8	
S-BK	15					PXT8		TXR8	
Y-BL	41		T6			TXT8		PXT8	
BL-Y	16		R6			TXR8		PXR8	
Y-O	42					PXR9		TXT9	
O-Y	17					PXT9		TXR9	
Y-G	43					TXT9		PXT9	
G-Y	18					TXR9		PXR9	
Y-BR	44		T7			PXR10		TXT10	
BR-Y	19		R7			PXT10		TXR10	
Y-S	45					TXT10		PXT10	
S-Y	20					TXR10		PXR10	
V-BL	46					PXR11		TXT11	
BL-V	21					PXT11		TXR11	
V-O	47		T8		LI*	TXT11		PXT11	
O-V	22		R8		LI	TXR11		PXR11	
V-G	48				LO	PXR12		TXT12	
G-V	23				LO*	PXT12		TXR12	
V-BR	49				LBACK2	TXT12		PXT12	
BR-V	24				LBACK1	TXR12		PXR12	
V-S	50								
S-V	25								

The wire colors in this chart apply only to B25A and A25B cables. H600-307 cable colors are not shown.

The following wire colors apply to this chart:

W	White	S	Slate (Grey)
BL	Blue	R	Red
O	Orange	BK	Black
G	Green	Y	Yellow
BR	Brown	V	Violet

The following abbreviations apply for all circuit packs unless otherwise noted

T,R	PBX transmit voice	T	Tip	(A)	Green
T1,R1	PBX receive voice	R	Ring	(B)	Red
M	PBX transmit signal	S	Sleeve		
E	PBX receive signal		PX	PBX transmit	
TX	Terminal transmit				
LI, LI*	Digital Trunk IN	LO, LO*	Digital Trunk OUT		

Lead and Color Designations

Begin

Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
1	W-BL	26	102
2	BL-W	01	002
3	W-O	27	103
4	O-W	02	003
5	W-G	28	104
6	G-W	03	004
7	W-BR	29	105
8	BR-W	04	005
9	W-SL	30	106
10	SL-W	05	006
11	R-BL	31	107
12	BL-R	06	007
13	R-O	32	108
14	O-R	07	008
15	R-G	33	109
16	G-R	08	009
17	R-BR	34	110
18	BR-R	09	010

Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
19	R-SL	35	111
20	SL-R	10	011
21	BK-BL	36	112
22	BL-BK	11	012
23	BK-O	37	113
24	O-BK	12	013
25	BK-G	38	302
26	G-BK	13	202
27	BK-BR	39	303
28	BR-BK	14	203
29	BK-SL	40	304
30	SL-BK	15	204
31	Y-BL	41	305
32	BL-Y	16	205
33	Y-O	42	306
34	O-Y	17	206
35	Y-G	43	307
36	G-Y	18	207
37	Y-BR	44	308
38	BR-Y	19	208
39	Y-SL	45	309
40	SL-Y	20	209
41	V-BL	46	310
42	BL-V	21	210
43	V-O	47	311
44	O-V	22	211
45	V-G	48	312
46	G-V	23	212
47	V-BR	49	313
48	BR-V	24	213
49	V-SL	50	300
50	SL-V	25	200

Begin

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
1	TXT.1	1	W-BL	26	102
	TXR.1	2	BL-W	01	002
	PXT.1	3	W-O	27	103
	PXR.1	4	O-W	02	003
2	TXT.2	5	W-G	28	104
	TXR.2	6	G-W	03	004
	PXT.2	7	W-BR	29	105
	PXR.2	8	BR-W	04	005
3	TXT.3	9	W-SL	30	106
	TXR.3	10	SL-W	05	006
	PXT.3	11	R-BL	31	107
	PXR.3	12	BL-R	06	007
4	TXT.4	13	R-O	32	108
	TXR.4	14	O-R	07	008
	PXT.4	15	R-G	33	109
	PXR.4	16	G-R	08	009
5	TXT.5	17	R-BR	34	110
	TXR.5	18	BR-R	09	010
	PXT.5	19	R-SL	35	111
	PXR.5	20	SL-R	10	011
6	TXT.6	21	BK-BL	36	112
	TXR.6	22	BL-BK	11	012
	PXT.6	23	BK-O	37	113
	PXR.6	24	O-BK	12	013
7	TXT.7	25	BK-G	38	302
	TXR.7	26	G-BK	13	202
	PXT.7	27	BK-BR	39	303
	PXR.7	28	BR-BK	14	203
8	TXT.8	29	BK-SL	40	304
	TXR.8	30	SL-BK	15	204
	PXT.8	31	Y-BL	41	305
	PXR.8	32	BL-Y	16	205

TN2198 ISDN-BRI 2-wire U Interface

Begin

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
1	T.1	1	W-BL	26	102
	R.1	2	BL-W	01	002
2	T.2	3	W-O	27	103
	R.2	4	O-W	02	003
3	T.3	5	W-G	28	104
	R.3	6	G-W	03	004
4	T.4	7	W-BR	29	105
	R.4	8	BR-W	04	005
5	T.5	9	W-SL	30	106
	R.5	10	SL-W	05	006
6	T.6	11	R-BL	31	107
	R.6	12	BL-R	06	007
7	T.7	13	R-O	32	108
	R.7	14	O-R	07	008
8	T.8	15	R-G	33	109
	R.8	16	G-R	08	009
9	T.9	17	R-BR	34	110
	R.9	18	BR-R	09	010
10	T.10	19	R-SL	35	111
	R.10	20	SL-R	10	011
11	T.11	21	BK-BL	36	112
	R.11	22	BL-BK	11	012
12	T.12	23	BK-O	37	113
	R.12	24	O-BK	12	013

* Pins 25 and 50 are grounded by the backplane.

TN793B 24-Port Analog Line circuit pack

Begin

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
1	T.1	1	W-BL	26	102
	R.1	2	BL-W	01	002
2	T.2	3	W-O	27	103
	R.2	4	O-W	02	003

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
3	T.3	5	W-G	28	104
	R.3	6	G-W	03	004
4	T.4	7	W-BR	29	105
	R.4	8	BR-W	04	005
5	T.5	9	W-SL	30	106
	R.5	10	SL-W	05	006
6	T.6	11	R-BL	31	107
	R.6	12	BL-R	06	007
7	T.7	13	R-O	32	108
	R.7	14	O-R	07	008
8	T.8	15	R-G	33	109
	R.8	16	G-R	08	009
9	T.9	17	R-BR	34	110
	R.9	18	BR-R	09	010
10	T.10	19	R-SL	35	111
	R.10	20	SL-R	10	011
11	T.11	21	BK-BL	36	112
	R.11	22	BL-BK	11	012
12	T.12	23	BK-O	37	113
	R.12	24	O-BK	12	013
13	T.13	25	BK-G	38	302
	R.13	26	G-BK	13	202
14	T.14	27	BK-BR	39	303
	R.14	28	BR-BK	14	203
15	T.15	29	BK-SL	40	304
	R.15	30	SL-BK	15	204
16	T.16	31	Y-BL	41	305
	R.16	32	BL-Y	16	205
17	T.17	33	Y-O	42	306
	R.17	34	O-Y	17	206
18	T.18	35	Y-G	43	307
	R.18	36	G-Y	18	207
19	T.19	37	Y-BR	44	308
	R.19	38	BR-Y	19	208
20	T.20	39	Y-SL	45	309
	R.20	40	SL-Y	20	209

Port	Signal	Cross-Connect Pin	Color	Amphenol Pin	Backplane Pin
21	T.21	41	V-BL	46	310
	R.21	42	BL-V	21	210
22	T.22	43	V-O	47	311
	R.22	44	O-V	22	211
23	T.23	45	V-G	48	312
	R.23	46	G-V	23	212
24	T.24	47	V-BR	49	313
	R.24	48	BR-V	24	213

DS1 Interface Cable H600-307

Begin

50-Pin			15-Pin		
Pin	**Color**	**Designation**	**Pin**	**Color**	**Designation**
02	W-BL				
03	BL-W				
47	W-G	LI (High)	11	W-G	LI (High)
22	G-W	LI	03	G-W	LI
48	W-BR	LO	09	W-BR	LO
23	BR-W	LO (High)	01	BR	LO (High)
49	W-SL	LOOP2	06	W-SL	LOOP2
24	SL-W	LOOP1	05	SL-W	LOOP1
All other pins empty.					

Index

Numerics

100A LIU, 387
10A LIU, 388
110A-type terminal blocks (SCC), 53
110P-type terminal blocks (MCC), 54
110P-type terminal blocks, frame-mounting, 82
110RA1-12 terminating resistor block, 204
110-type hardware, 50, 60
110-type hardware, SCP-110 sneak current protection, 56
110-type terminal blocks, 53
110-type terminal blocks, wall-mounting, 79
1110A2 apparatus mounting frame, 82
1110C1 cable support, 82
1145B power supply, 183, 186, 188
1146B power distribution unit, 189, 193
1151A1 and 1151A2 power supply, 196, 197
1151A1 power supply, 195
1151A2 power supply, 195
120 CSU, 280
127A BALUN coaxial adapter, 305, 315
258A adapter, 63
26B1 selector console, 155, 156
2-wire digital station wiring, 143
3150/3170 CSU, 282
356A adapter, 63
367A adapter, 206
3-pair and 4-pair modularity, 151
3-pair modularity, 76
3-pair to 4-pair station circuits, 65
3-pair trunks, cabling, 58
4 port DIOD pinouts, 417
440A4 terminating resistor adapter, 204
451A extension adapter, 63
4C3S-75 enhanced protector, 165
4C3S-75 enhanced protector, installing, 166
4-pair station circuits, 65
572 printer, 371
7400A data module, 338, 369
7400A/7400B+ data module, 101, 102
7400B data module, 338
7400B+ data module, 102
7400D data module, 366
808A emergency transfer panel, 168, 169, 170
8400B+ data module, 101, 102

A

AC power, 318
  checking voltage, 43
  connecting, 31
  connecting to DC power cabinet, 37
  ground wiring, 25, 26
  grounding, 23, 383
  single phase, 24
  three-phase, 24
AC/DC mixed power and ground, 40
AC/DC powered cabinet, connecting, 40
acceptance testing, telephones, 355
accessing the DEFINITY system, 91
accessing the system, 95
AC-powered system
  power up, 105
activating the system, 91, 103
adapter
  258A, 356A, BR2580A, ZD8AJ, 63
  451A extender, 63
add translation, 120
adding
  CallVisor ASAI, 216
  circuit packs, 200
  CO trunk, 296
  code calling access, 216
  CSU, 279
  DCS interface, 224, 225, 226, 227, 229
  DID trunk, 296
  DID trunks, 296
  DS1 tie trunks, 298
  external modem to EPN, 328
  external modem to PPN, 329
  external modem to TN1648B, 330
  FX trunk, 296
  ISDN PRI, 294, 295, 296
  OPS trunks, 298
  packet bus support (R9si), 219, 220, 221, 224
  PCOL trunk, 296
  pooled modem, 336
  speech synthesis, 216
  tie trunk, 297
  tie trunks, 297
  TN750/B/C, 212
  TN750C, 215
  TTC Japanese 2-Mbit trunks, 304
  WATS trunk, 296

adding CSU, 282
adding data module to switch, 101
additional hardware
  installing, 199
adjunct power, 142, 143, 152
administation terminals, connectable, 139
administering circuit packs, 92
administering fiber links, 405
administering fiber optic cable, 403
administering IP trunk mode, 262
administering MCCs, 110, 112
administering patch cords and jumpers, 72
administering PNC duplication, 404
administering the attendant console, 119
administering the system, 91, 106
administering TN464GP and TN2464BP, 230
administration commands, 92
administration commands, introduction, 92
administration terminals, connectable, 70
alarm connections, 156
alarm wiring, 143
alarms, 121, 125, 362
  terminal alarm notification, 126
A-Law companding, 264
amphenol pins, 419
analog line circuit protectors, 164
analog station wiring, 143
analog telephones, 162
analog tie trunk wiring, 145
announcement, 213, 214
  playback procedure, 357
announcements
  deleting, 357
  recording, 357
  testing, 357
announcements, moving, 215
announcements, moving from TN750B to TN750C, 214
APP connector information, 415
approved grounds, 383
Argentina, country code, 113
AT control modem, 369
attendant console, 153
  maximum cabling distance, 142
attendant console LEDs, 125, 126
attendant console, administering, 119
attendant console, cabling distances, 154
attendant console, installing, 155
attendant console,testing, 356
AUDIX
  connections through processor interface, 377
AUDIX sytem power procedures, 95
AUDIX, powering, 91
Australia, country code, 113
Automatic Registration Tool (ART), 121
AUX trunk pinouts, 415
auxiliary cabinet equipment, 20
auxiliary cabinet, cabling to MDF, 79
auxiliary cabinets
  cabinet location, 20
auxiliary connector outputs, 148
auxiliary equipment
  classification, 200
auxiliary equipment pin designations, 415
auxiliary equipment pinouts, 415, 417
auxiliary power
  alarms, 156
  attendant console, 153
Avaya R300 Remote Office Communicator, 233

B

backplane pins, 419
back-up battery, 188, 189, 191
basic rate interface. See BRI
battery
  mounting, 191
battery cabinet, connecting to DC power cabinet, 40
battery charger, optional, 31
battery holdover assembly, 28
battery holdover, connecting, 29
battery interface module, installing, 33
battery leads, connecting, 28
battery, connecting DC, 37
Belgium, country code, 113
bit rate
  setting, 380
bonding conductor, coupled, 87
BR2580A adapter, 63
BR851-B adapter, 206
Brazil, country code, 113
BRI, 203
  fanout of multipoint installations, 206
  multipoint cabling, 208
  terminating resistor, 203
BRI, installing, 209, 210
BRI, testing, 359
bringing the system online, 91
building steel ground, 383

C

cabinet
  cable clamps, 61
cabinet grounds, 23

cabinet grounds, connecting, 34
cabinet location
  auxiliary cabinet, 20
  EPN cabinet, 19
  PPN cabinet, 19
cabinet, cabling to MDF, 78
cabinets
  attaching to floor, 22
  connecting DC pewer, 39
cable
  diagrams, 415
  fiber optic, 403
    single mode, 389
  fiber optic, cleaning, 390
  fiber optic, labels, 390
  fiber optic, multimode, 389
cable clamps, 84
cable clamps, for cable slack manager, 61
cable installation,control carrier outputs, 57
cable routing guidelines, 57
cable routing, MDF, 57
cable slack manager, installing, 84
cable slack manager, space requirements, 60
cable tests, 125
cable, attendant console cabling distances, 154
cables
  25-pair I/O, 61, 84
  DCS, 225
  fiber optic, 44
  installing, 209
  IP interface, 258
  IP Media Processor, 242, 245
  outputs for control carrier, 148
cables, installing, 56, 236, 249
cables, installing between auxiliary cabinet and MDF, 79
cables, installing between cabinet and MDF, 78
cabling
  installing trunk cables, 58
  provisioning plan, 49
cabling labels, 57
cabling layout, 71
call detail recording. See CDR.
calling queue, 179
CallVisor ASAI, adding, 216
CallVisor ASAI, installing, 217, 218, 219
CAMA/E911 trunks, 285, 287, 288, 289, 290, 291, 292
carbon block protectors
  off-premises connections, 164
CDR
  option settings, 374
  printer, 371
CE marks, 4
Cellular Business System, 200
channel service unit. See CSU.
check commercial power, 43
checking circuit pack configuration, 131, 137
checking system status, 129
China, country code, 113
circuit pack configuration, testing, 131, 137
circuit pack damage or discrepancies, 19
circuit pack LEDs, 125
circuit pack pinouts, 415, 417
circuit packs
  adding, 200
  classification, 200
  configuration testing, 137
  digital line, 98
  DS1 converter LEDs, 126
  duplication interface LEDs, 126
  installing, 202
  LEDs, 126
  pin designations, 415
Circuit Packs form
  administration commands, 93
  circuit pack cabinet layouts, 93
  implementation notes, 94
  instructions, 93
circuit packs, administering, 92
C-LAN, 224, 238, 240, 253
  test external connection to LAN, 227, 240
C-LAN connection, testing, 360
C-LAN, installing, 237
C-LAN-distributed firmware download
  procedure, 342
cleaning
  fiber optic cables, 390
closets
  site locations, 61
CO trunk, 380
CO trunk pinouts, 415
CO trunk wiring, 143
CO trunk3-wire pinouts, 417
CO trunks, 296
code calling access, 216
collocated DS1 tie trunks, wiring, 146
commands, introduction, 92
COMSPHERE modem, 370
concentrator cables, connecting trunk pairs, 75
concrete encased ground, 383
concrete floor mounting, 21
conductor, coupled bonding, 60
connectable administration terminals, 70
connectable terminals, 139
connectable voice and data terminals, 69
connecting AC power, 31, 37
connecting AC power to DC power cabinet, 37

connecting battery leads, 28
connecting cabinet grounds, 34
connecting control carrier outputs cable, 75
connecting DC battery and power cabinet grounds, 37
connecting DC power to cabinets, 39
connecting external alarm cable, 42
connecting external alarm indicators, 156
connecting fiber optic cable, 45, 385
  critical-reliability CSS system, 47
  high-reliability CSS system, 46
  standard-reliability CSS system, 45
connecting ground wires, DC systems, 38
connecting large battery holdover, 29
connecting mixed AC/DC power and ground, 40
connecting remote power off cable, 41
connecting small battery holdover, 29
connecting TN1654 through CSU, 311
connecting to the DEFINITY ECS, 97, 98, 99
connection diagrams, station cables, 65
connections
  ITS to network, 237
connectors
  data communications equipment, 374
console
  attendant, testing, 356
  selector, testing, 356
control carrier cable labels, 75
control carrier outputs cable, 75, 148
control carrier outputs cable, installing, 57
country codes, 113
country options, setting, 113
coupled bonding conductor, 25, 87
coupled bonding conductor wires, installing, 36
coupled bonding connector, 60
craft login, 107
craft password, changing, 114
critical reliability
  testing systems, 135, 136
critical reliability systems, enabling duplication, 119
CSU
  120A, adding, 280
  3150/3170, adding, 282
  cabling to DS1 converter, 311
  connecting TN1654 through, 311
CSU, adding, 279
Czechoslovakia, country code, 113

D

damage, reporting, 18
data communications equipment connector, 374
data link protector, installing, 166
data module, 101, 102
  7400A, 338, 365, 369
  7400B, 338, 365
  7400D, 365, 368
  answer only interface, 366
  modem setting, 337
  switch settings, 365
data module connection to DEFINITY ECS, 98
data module DIP switch locations, 365
data module settings, 96
data module, setting to DCE mode, 101
data terminals, connectable, 139
date, set procedure, 116
daylight savings rules, 115
DC power, 32, 36, 318, 319
  battery interface module, installing, 33
  connecting battery and power cabinet grounds, 37
  connecting battery cabinet to power cabinet, 40
  connecting cabinets, 39
  connecting ground wires, 38
  rectifier module, installing, 33
  signaling leads, 378
DC power cabinet, 37
  approved ground, 37
  connecting AC power, 37
DC/AC mixed ground and power, 40
DCE mode, setting data module, 101
DC-powered system
  power up, 105
DCS
  switch settings, 365
DCS interface, adding, 224, 225, 226, 227, 229
DCS switches, setting, 367
DEFINITY ECS, connecting the PC, 97, 98, 99
DEFINITY ECS, connecting through a data module, 98
DEFINITY ECS, connecting through a modem, 99
DEFINITY ECS, system testing, 362
DID trunk wiring, 143
DID trunk, adding, 296
DID trunks, 296
DID/DIOD pinouts, 417
digital line circuit pack, 98
digital line circuit protectors, 165
digital tie trunk wiring, 146
DIP switch locations, data module, 365
DIP switch settings, 7400B+ data module, 102
DIP switch settings, U S Robotics modem, 99
direct connect systems, 44
direct department calling
  testing queue warning indicator, 357
direct PC connection to DEFINITY ECS, 97

distributed communications system. See DCS.
D-lead modem, 369
domain name, assigning, 264
DS1 converter, 411, 412, 413
  cabling, 305
  circuit pack LEDs, 126
  duplicated, 410
  E1, 308, 309, 310, 311, 315, 316
  option switches, 305
  T1, 308, 309, 310, 311, 315, 316
  Y cable, 311
DS1 H600-307 cable pinouts, 424
DS1 interface, 380
DS1 pinouts, 417
DS1 tie trunks, 298, 299, 300, 301, 302
DS1 tie trunks, wiring, 146
DS1C converter, 407
duplicated SPE interchange, testing, 133
duplicated systems, 119
duplication interface cabling, MCC, 43

E

E1 interface, 380
earthquake protection, MCC, 21, 22
echo cancellation, 230
  TN2464BP, 230
  TN464GP, 230
EIA, 374
EIA port, 374
electromagnetic compatibility standards, 3
Electronic Industries Association, 374
emergency transfer panel, installing, 170
emergency transfer telephones, 175, 176
emergency transfer units, 168
emergency transfer, testing, 358
EPN
  expansion interface exchange, testing, 136
  TDM, testing, 135
  tone clock interchange, testing, 135
  tone-clock, testing, 135
EPN cabinets
  cabinet location, 19
EPN tests, 125
EPN, connect external modem, 328
equipment room cabling labels, 57
equipment room, cable routing, 57
equipment room, station circuit distribution from, 65
expanded power distribution unit, 191
expansion interface circuit packs, testing, 134
expansion interface exchange, testing, 136
expansion links, service state, 129
external alarm cable, connecting, 42
external alarm indicators, connecting, 156
external alarm wiring, 143, 157
external modem
  COMSPHERE, 370
external ringing, 177
external ringing, testing, 356

F

Feature Access Code form, 289
Fiber Link Administration form, 403
  basic fields, 405
  DS1 converter instructions, 411, 412, 413
  DS1C converter instructions, 407
  duplication administration fields, 405
  PNC duplication, 404
fiber optic
  multimode transceiver, 389
fiber optic cable, 403
  critical-reliability CSS system, 47
  direct connect systems, 44
  Fiber Link Administration form, 403
  high-reliability CSS system, 46
  installing, 45
  labels, 390
  MCC1, 391, 402
  multimode, 389
  single mode, 389
  standard-reliability CSS system, 45
fiber optic cable pass-thru kit
  MCC1, 391
fiber optic cable, connecting, 385
fiber optic cable, handling, 385
fiber optic duplication interface cabling, MCC, 43
fiber optic pass-thru kit
  MCC1, 395
firmware
  downloads
    uploading image files from Web, 345
Firmware download, 341
firmware download
  aborting a download, 352
  backing out of, 353
  disabling file system, 352
  preparing to download, 343
  removing files, 352
  reverting to an older vintage, 353
  scheduling, 346, 350
  testing a C-LAN-distributed download, 352
  testing a self download, 352
  troubleshooting downloads, 352

uploading image files from Web, 345
uploading image files using FTP, 345
firmware download procedure
C-LAN-distributed, 342
self download, 342
firmware downloads
circuit pack roles, 341
high-level procedure, 341
flash card, installing, 103
floor grounds, 383
floor plans, 71
Forum
Personal Communications Manager, 200
France, country code, 114
FTP
setting up circuit pack to receive files, 345
FX trunks, 296

G

gateway, assigning, 267
Germany, country code, 114
Greece, country code, 113
ground
coupled bonding conductor, 25
coupled bonding connector, 60
ground ring, 383
ground wiring
DC, 32
ground, cabinets, 34
grounds
approved, 383
connecting AC, 23

H

handling fiber optic cable, 385
hardware, MDF, 50
Hong Kong, country code, 113
hybrid line pinouts, 415

I

I/O cables, 84
ICSU, 279
cable guidelines, 279
required components, 279
impedance, setting, 380
INADS, 159
register system, 121
testing, 358
information outlets, wiring design, 61
Initialization and Administration System. See INADS.
installation
additional port circuit packs, 199
modems, 325
installing auxiliary cabinet, 20
installing auxiliary cabinet equipment, 20
installing cable slack manager, 84
installing cables, 56
installing cables between auxiliary cabinet and MDF, 79
installing cables between cabinet and MDF, 78
installing coupled bonding conductor wires, 36
installing earthquake protection, MCC, 21, 22
installing EPN cabinet, 19
installing fiber optic cable, 45
critical-reliability CSS system, 47
high-reliability CSS system, 46
MCC1, 391
standard-reliability CSS system, 45
installing fiber-optic cable
MCC1, 395
installing patch cords and jumpers, 72
installing PPN cabinet, 19
installing sneak fuse panels, 85
installing system access software, 91, 95
installing the MDF, 53
installing trunk cables, 58
integrated announcement
testing, 357
integrated channel service unit, 279
integration process
connecting ITS components, 249, 259
connecting ITS to the network, 237
internet telephony server. See ITS.
IP address, assigning, 265
IP connections, testing, 271
IP gateway, assigning, 267
IP interface
administering Media Processor mode, 253
connect modem, 249, 259
IP Trunk mode/MedPro mode, 233
required hardware, 247, 257
IP interface (TN802B), installing in IP trunk mode, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 267, 270, 271
IP interface (TN802B), installing in MedPro mode, 246, 248, 249, 250, 253, 255
IP interface (TN802B), upgrading to TN2302AP IP Media Processor, 243, 244, 245
IP interface assembly, 233

IP Trunk mode, 256
test external connection to LAN, 271
test onboard LAN connections, 271
IP interface LAN connections, 271
IP Media Processor, 233, 238
installing, 233, 236
software limits, 234
test external connection to LAN, 240
IP Media Processor, connecting, 240
IP Media Processor, installing, 237
IP Media Processor, upgrading from IP interface assembly, 243, 244, 245
IP Media Processor, upgrading to, 241, 242
IP network connection, testing, 360
IP Solutions, 233
Avaya R300 Remote Office Communicator, 233
onsite prerequisites, 234
TN2302AP, 233
TN802/B, 233
IP Solutions, inspecting, 235
IP Trunk mode, 233, 256
assign IP address, 265
change Mu-Law to A-Law, 264
IP trunk mode, administering, 262
IP trunk mode, installing, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 267, 270, 271
ISDN, 380
BRI testing, 359
PRI interface, 380
ISDN BRI, 203
fanout of multipoint installations, 206, 208
terminating resistor, 203
ISDN BRI pinouts, 417
ISDN BRI, installing, 209, 210
ISDN PRI trunks, 294, 295, 296
Italy, country code, 113
ITS
changing network services, 270
connecting components, 249, 259
ITW Linx enhanced protector, 165
ITW Linx enhanced protector, installing, 166

J

J58890CE-2 power distribution unit, 31
Japan, country code, 113
jumper wires, connecting trunk pairs, 76
jumpers, installing and administering, 72

L

labels
fiber optic cable, 390
labels, control carrier cable, 75
labels, equipment room cabling, 57
labels, MDF, 54
LAN
testing external connection, 255
LAN connections, testing, 271
large battery holdover, 29
LASER, Class 1
parameters, 385
lead and color designations, pinouts, 419
lead designations
port circuit packs and telephones, 144, 151, 159
LED indicators
Stratum 3 clock, 361
LEDs
alarms, 125
attendant consoles, 126
circuit packs, 126
DS1 converter circuit packs, 126
standby components, 127
T1/E1 status, 127
LEDs, power distribution unit, 194
License File, 108, 109, 218, 223, 229, 304
License Installation Tool (LIT), 109, 218, 223, 229, 304
light emitting diodes. See LEDs.
lightguide connector panel, 388
lightguide interconnect unit. See LIU.
lightguide troughs, 388
lightwave transceivers, 385
LIU, 385
LIU, 100A, 387
LIU,10A, 388
locating the MDF, 53
logging in to the system, 107

M

Macedonia, country code, 113
main circuit breaker, 38
Main Distribution Frame. See MDF
MCC
changing cabinet 1, 110
changing cabinets, 112
changing site data, 110
earthquake protection, 21, 22

reboot high reliability system, 118
MCC fiber optic duplication interface cabling, 43
MCC1
fiber optic pass-thru kit, 395
install fiber optic cable, 391
test fiber optic cable installation, 402
MDF
alarm connections, 157
emergency transfer connections, 170
emergency transfer unit, 168
off-premises connections, 161, 162
MDF cabling, 56
MDF connections, multicarrier cabinet, 52
MDF connections, single-carrier cabinet, 50
MDF cross-connect fields, 52
MDF hardware, 50
MDF labels, 54
MDF location, 53
MDF, cabling to auxiliary cabinet, 79
MDF, cabling to cabinet, 78
MedPro mode, 233
MedPro mode, installing, 246, 248, 249, 250, 253, 255
MET line pinouts, 415
Mexico, country code, 113
mixed AC/DC powered cabinet, connecting, 40
modem
AT control, 369
COMSPHERE, 370
connect to telephone network, 325
connected to data module, 337
connected to DTE, 338
D-lead, 369
network jack
pinout, 325
pass-thru kit, 330
modem connection to DEFINITY ECS, 99
modem, AT control, 338
modem, connect to EPN, 328
modem, connect to PPN, 329
modem, connect to TN1648B, 330
modem, D-lead options, 338
modem, external, 370
modem, external, switch settings, 326
modem, pooled, 336
modems, installing and connecting, 325
modularity
3-pair and 4-pair, 151
mounting terminal blocks, 79, 82
multimode fiber optic transceiver, 389
multiple announcements, adding, 212, 215
multipoint adapters, 206
multipoint installations, 208
music-on-hold, testing, 358

N

National Electrical Code
grounding rules, 23, 383
Netherlands, country code, 113
network
connecting ITS, 237
network configuration
changing network services, 270
network jack, on modem, 325
night ringing, testing, 356
Nordic, country code, 114

O

off-premises connections, 162
off-premises digital line circuit protectors, 165
off-premises protection, 164, 165
off-premises station wiring, 161
off-premises stations, 162
off-premises stations, wiring, 316
onboard LAN connections, testing, 271
OPS trunks, 298, 299, 300, 301, 302
optical connector couplings, 388
optical cross-connects, 385
option settings
7400A and 7400B data modules, 338
7400A data module, 369
7400D data module, 368
data module, 365
AUDIX, 377
option switch settings, 365
order checking, 18
out-of-building connections, 162
out-of-building stations, 162
outputs cable for control carrier, 148

P

packet bus support, 295
packet bus support, adding, 219, 220, 221, 224
packet data line pinouts, 417
pass-thru kit
MCC1, 391
password
craft, changing, 114
patch cords, installing and administering, 72
PCOL trunks, 296
pin designations

auxiliary equipment, 415
circuit packs, 415
port circuit packs and telephones, 144, 159
pinout charts, 415
pinout information
port circuit packs and telephones, 151
pinouts, 415, 417
auxiliary, 415
circuit packs, 415
DS1 H600-307 cable, 424
lead and color designations, 419
TN2185B circuit pack, 421
TN2198 circuit pack, 422
TN793B circuit pack, 422
playback announcement, testing, 357
PNC duplication, 404
PNC duplication administration fields, 405
Poland, country code, 113
pooled modem, adding, 336
Port Assignment Record form, 72
port circuit pack pin designations, 144, 151, 159
port circuit packs
installing, 199
Port Network Connectivity. See PNC.
positioning, 317
power
single-phase 240VAC, 24
power cabinet ground, connecting approved DC ground, 37
power cabinet grounds, connecting DC, 37
power distribution unit, 157, 194
power down
AUDIX, 95
power supply, 193
1151A1 -48V, 195
1151A2 -48V, 195
power up
AC-powered system, 105
AUDIX, 95
DC-powered system, 105
powering AUDIX, 91
PPN
TDM, testing, 131
PPN cabinets
cabinet location, 19
PPN tests, 125
PPN, connect external modem, 329
PRI trunks, 294, 295, 296
primary protectors
off-premises connections, 164, 165
printer
572 option settings, 371
option settings, 371
processing element interchange, testing, 359
provisioning plan, 49

Q

queue warning indicator, 179
queue warning indicator, testing, 357

R

rebooting critical reliability systems, 119
recorded announcement, testing, 357
rectifier module, installing, 33
registering system with INADS, 121
remote access, testing, 358
remote network interface, 159, 160
remote PC connection to DEFINITY ECS, 98, 99
remote power off cable, connecting, 41
remote system access, testing, 358
removable media, installing, 104
reporting circuit pack damage or discrepancies, 19
reporting damage, 18
reseating
TN2501AP (VAL board), 351
returning equipment, 19
ringing, testing, 356
routing cables to MDF, 57
Russia, country code, 113

S

safety instructions
1145B power supply, 186
1151A1 and 1151A2 power supply, 196
Saudi Arabia, country code, 113
save translation, 119, 120, 210, 219, 220, 224, 229, 296, 299, 302
schedule
for firmware download, 346, 350
screens
administration, introduction, 92
selector console, 156
selector console, testing, 356
self download
procedure, 342
server name, assigning, 264
service states, checking, 129
setting
bit rate, 380
line impedance, 380

setting 7400B+ data module options, 102
setting data module operating mode, 102
setting data module to DCE mode, 101
setting date and time, 116
setting daylight savings rules, 115
shadowing link, testing, 133
shipping errors, 19
shipping packing lists, 18
SHOCKWATCH indicators, 18
shorting cable, 31
signaling leads, DC power, 378
Singapore, country code, 113
single-phase 240VAC, 24
site locations, adapters, 61
sneak current protection, 56
sneak current protection, installing, 85
sneak current protectors
  off-premises connections, 164, 165
sneak fuse panel, space requirements, 60
sneak fuse panels, 56, 60
sneak fuse panels, installing, 85
South Africa, country code, 114
space requirements
  110-type hardware, 60
  cable slack manager, 60
  sneak fuse panels, 60
Spain, country code, 114
SPAN LEDs, 127
SPE duplication memory shadowing, testing, 133
SPE interchange, testing, 133
speech synthesis, adding, 216
standards
  electromagnetic compatibility, 3
standby components
  LEDs, 127
start-up messages, 105
station cables, sizing, 71
station cables, wiring design, 61
station circuit distribution, 65
storage media
  removable media, 104
  translation card, 103
Stratum 3 clock, 317
  cabling, 320
  checking AC power, 318
  connecting to DC power, 318, 319
  cross-connects
    high or critical reliability, 322
    standard reliability, 322
  grounding cabinet, 318
  installing, 317
  LED indicators, 361
  maximum cabling distance, 322
  setting options, 319
  testing LED indicators, 361
  wiring, 322
Stratum 3 clock, administering, 362
Stratum 3 clock, connecting AC power, 318
Stratum 3 clock, inspecting, 317
Stratum 3 clock, testing, 361
Stratum 3 clock, timing, 362
switch settings, 365
  572 printer, 371
  7400A and 7400B data modules, 338
  7400A data module, 369
  7400D data module, 368
  CDR, 374
  data module, 365
    AUDIX, 377
  DCS, 365
  external modem, 326, 370
  TN2464 circuit pack, 380
  TN464 circuit pack, 380
  TN760 tie trunk, 378
system access, 91
system access testing, 358
system printer, 371
system start-up messages, 105
system status, checking, 129
system test alarms, 362
system testing, 362
sytem tests, 125

T

T1 CSU, and DS1 tie trunk, 146
T1/E1 status LEDs, 127
TDM bus, 380
  service state, 129
TDM, testing, 131, 135
telephone calls
  making test calls, 355
telephone pin designations, 144, 151, 159
telephones
  emergency transfer, 175, 176
telephones, connecting, 142
telephones, testing, 355
terminal alarm notification
  alarms, 126
terminal blocks, frame-mounting, 82
terminal blocks, wall-mounting, 79
terminals,connecting, 65
terminating resistor, 203
terminating trunk transmission test types, 360
test
  other equipment, 355

telephones, 355
test circuit packs
LEDs, 127
test external connection to LAN
C-LAN, 227, 240
IP Media Processor, 240
TN802B, 271
TN802B circuit pack, 255
test inads-link command, 358
test types, terminating trunk transmission, 360
testing data module hardware connections, 101
testing fiber optic cable
MCC1, 402
testing the system, 125
Thailand, country code, 113
three-phase VAC power, 24
tie trunk
analog wiring, 145
circuit pack option settings, 378
digital wiring, 146
tie trunk pinouts, 417
tie trunk, adding, 297
tie trunks, 297
TILTWATCH indicators, 18
time division multiplexor. See TDM.
time, set procedure, 116
TN1648B, 330
TN1654 circuit pack, 305
TN1654 DS1 converter circuit packs, 411, 412, 413
TN1654 DS1 converter circuit packs, duplicated, 411
TN2185B circuit pack pinouts, 421
TN2198 circuit pack pinouts, 422
TN2214CP, upgrading firmware on, 341
TN2224CP, upgrading firmware on, 341
TN2302AP, 233
installing, 233, 236
software limits, 234
required hardware, 235
TN2302AP circuit pack, 237, 238
TN2302AP circuit pack, upgrading to, 242
TN2302AP, upgrading firmware on, 341
TN2302AP, upgrading from TN802B IP interface assembly, 243, 244, 245
TN2302AP, upgrading to, 242
TN2464 circuit pack, 380
TN2464BP, 230
TN2464BP, upgrading firmware on, 341
TN2501AP
reseating and resetting, 351
TN2501AP (integrated announcements)
faceplate LEDs and interpretation, 210
TN2501AP, upgrading firmware on, 341
TN429 circuit pack, 287
TN464 circuit pack, 380
TN464GP, 230
TN464GP, upgrading firmware on, 341
TN574 DS1 converter circuit packs, 407
TN574 DS1 converter complex circuit packs, 410
TN750 circuit pack, 213, 214, 215
TN750/B/C, adding, 212
TN750C circuit pack, 214
TN750Ccircuit pack, 215
TN760 circuit pack
option settings, 378
TN771DP, upgrading firmware on, 341
TN793B circuit pack pinouts, 422
TN799B, 224
TN799B circuit pack, 360
TN799B C-LAN, 236, 249
TN799B/C circuit pack, 237, 238
TN799DP, upgrading firmware on, 341
TN802/B, 233
TN802B
external cable assembly, 247, 257
test external connection to LAN, 271
test onboard LAN connections, 271
TN802B circuit pack
change Mu-Law to A-Law, 264
test external connection to LAN, 255
TN802B circuit pack, testing external LAN connection, 255
TN802B IP interface, upgrading to, 272, 273, 275, 277
TN802B, installing in IP trunk mode, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 267, 270, 271
TN802B, installing in MedPro mode, 246, 248, 249, 250, 253, 255
tone clock boards, testing, 132
tone clock interchange, testing, 135
tone clocks
service state, 129
tone-clock circuit packs
LEDs, 127
tone-clock, testing, 135
transfer, emergency, testing, 358
trunk cables, installing, 58
trunk pairs, connecting with concentrator cables, 75
trunk pairs, connecting with jumper wires, 76
trunk transmission testing, 360
trunks
CAMA/E911, 285, 287, 288, 289, 290, 291, 292
CO, 296
DID, 296
DS1, 298, 299, 300, 301, 302

FX, 296
ISDN PRI, 294, 295, 296
OPS, 298, 299, 300, 301, 302
PCOL, 296
tie, 297
TTC Japanese 2-Mbit, 304
WATS, 296
TTC Japanese 2-Mbit trunks, 304

U

U S Robotics modem DIP switch settings, 99
U. S. Robotics modem, 328, 329
uniform call distribution
testing queue warning indicator, 357
United Kingdom, country code, 113
upgrade
IP interface assembly to IP Media Processor, 243
IP Trunking to IP Media Processor, 241
IP trunks to H.323 trunks, 274
TN722 to TN767C, 299
TN802 V3 to TN802B, 272, 275
upgrade firmware
programmable circuit packs, 341
TN2214CP, 341
TN2224CP, 341
TN2302AP, 341
TN2464BP, 341
TN2501AP, 341
TN464GP, 341
TN771DP, 341
TN799DP, 341
USA, country code, 113
USR 33.6 EXT external modem, 328, 329

V

verifying system start-up messages, 105
voice and data terminals, connectable, 69
voice terminals, connectable, 139
voice terminals, exposed environments, 165

W

wall-mounting plates, 188
water pipe ground, 383
WATS trunks, 296
Wireless Business System, 200
wiring
1146B power distribution unit, 193
2-wire digital station, 143
alarm, 143
analog station, 143
analog tie trunk, 145
battery, 191
CO trunk, 143
DID trunk, 143
digital tie trunk, 146
DS1 tie trunks, 146
off-premises stations, 161, 316
pin designations, 415
procedures, 139, 183
telephone connection, 142

Z

ZD8AJ adapter, 63